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THE MOVING FINGER WRITES

Address at Centennial Dinner, American Medical Association, Atlantic City, N. J., June 7, 1947

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The law of compensation is inexorable. For threescore years I have been operated on physically, admonished mentally and laid upon orally by a countless succession of members of the American Medical Association. Now my hour has come. And you can rest assured that it is no small pleasure to me to have such a goodly company of you gentlemen at my verbal mercy—even though the expiation you are called on to render is necessarily vicarious in character.

A hundred years is but a split second in the chronology of the cosmos. It is a long time, however, in the calendar of mortal men. It is even more significant when applied to the life span of a voluntary organization of highly individualized professional experts scattered over a huge geographic area. Hence I consider it a signal honor to have been asked to join with you tonight in this, your Centennial Celebration.

In 1855 Dr. N. S. Davis predicted that, "of all the voluntary social organizations in our country, none are at this time in a position to exert a wider or more prominent influence over the temporal interests of our country than the American Medical Association." The decades that have since elapsed bear abundant testimony to the truth of his prophetic assertion. No grass has ever grown under the Association's feet. At its very first session in 1847 it began a fight for higher educational standards for the medical profession, urged the separation of "the business of teaching" from the "power of licensing," advocated uniform state laws for the registration of births, marriages and deaths and set about the preparation of a "General Nomenclature of Diseases" and a Code of Medical Ethics. In the year immediately following there came a resolution declaring that "every system of medical instruction should rest on the basis of practical demonstration and clinical teaching" and a memorial to Congress requesting the inspection of imported drugs to prevent adulteration—the forerunner, I take it, of our modern Food and Drug acts.

At the third annual meeting in Cincinnati in 1850 a discussion of medical literature led to the adoption of a petition to the federal government for an international copyright law along with what your old historian calls "an eloquent and truthful paragraph in relation to the nature and influence of a national literature of our own." With all of the subversive propaganda to which we are now subjected, that paragraph is well worth quoting: "Our institutions are peculiar and, in order to be legitimately carried out, should not only be well understood by all concerned but should be supported by habits of thinking and feeling in the community in full accordance with them." Had that sage advice been followed, our republic would not be facing many of the domestic problems with which it is confronted today.

The following year—1851—the fourth annual meeting was held in Charleston, S. C. Most of the Northern contingent journeyed down by sea. There was a heavy gale and it is duly recorded that "the rocking of the ship soon awakened a large proportion of our doctors, with feelings very much as though they had swallowed half of the ipecac in a respectable drug shop." Specific note is also made of the fact that in Charleston "for the first time in the history of the Association, wines and strong drink were freely furnished as a part of the entertainment!"

It has in truth been a remarkable hundred years—a century of well directed, collective effort of which the Association may indeed be properly and pardonably proud. Always in the forefront in the fight for higher standards of medical education and professional ethics, its far-flung technical services have set a mark for scope and efficiency unequaled in any similar organization elsewhere in the world. So both as an American citizen and as a grateful beneficiary of its myriad accomplishments in the field of private medicine and public health I congratulate and salute you—its members—confident that the second century of the Association's service will be even more fruitful than the one that has now come to such a praiseworthy conclusion.

Since we are honored tonight with the presence of the greatest military Omar in history—General Omar Bradley—it seemed not inappropriate to select for my subject "The Moving Finger Writes," a phrase from the poem of his namesake—"in reverse lend lease"—Omar Khayyam:

> The moving finger writes and, having writ,
> Moves on; nor all your piety nor wit
> Shall lure it back to cancel half a line,
> Nor all your tears wash out a word of it.

The moving finger of history is never still. Day by day it records relentlessly our national achievements and our popular follies; our vagaries of mass insanity

and our decisions of collective wisdom. For good or ill, the revolutionary changes in our approach to the problems of government during the past fifteen years stand stark and irrevocable, filled with the promise of freedom or the latent menace of tyranny, as only the future will reveal.

Some of these changes, I fear, would seem strange and sinister indeed to the men who laid the foundations of this republic. For, as their writings clearly indicate, theirs was no makeshift experiment. It was based on an exhaustive study of all previous attempts at popular self government in the world's history; on a determined effort to discover the hormones of a free society—the basic principles on which men may associate themselves to enjoy permanently the priceless blessings of liberty.

THE HORMONE OF COURAGE

The word hormone, as you well know, comes directly from the Greek and means literally to set in motion. The founding fathers, in brief, sought in our peculiar system of government to set in motion those fundamental forces and safeguards and incentives that are essential for the maintenance of human freedom. So we may well ask ourselves in these days of confusion What are those social hormones? To what extent has their action been crippled by individual ignorance and apathy; constricted by misguided humanitarianism and lust for political power, circumvented by the impact of modern industrial civilization and the rising tide of world collectivism?

The hormones of a free society are not many in number, but all are vitally essential to the effective functioning of a free body politic: self reliance, local responsibility for local affairs, personal initiative, thrift that leads to individual economic competence, social cohesiveness—the absence of class consciousness, tolerance, patience, civic virtue—the willingness to work and sacrifice for the public interest, belief in the dignity of the individual, courage. You may think of other social hormones, but these at least must be kept flowing freely in the blood stream of our people if our republic is to survive. The thyroid extract of initiative, the pituitary secretion of civic virtue, the adrenal hormone of courage and all the others are of transcendent importance to any nation of free men that seeks to preserve its liberty.

THE THREAT OF STATE SOCIALISM

In recent years the moving finger of history has recorded quite a disturbing story in respect to these basic characteristics on which our free institutions rest. I cannot attempt to discuss all of them so, as a typical example, let me take self reliance. The idea is not popular these days. Too many of us are prone to try to shoulder our troubles off on government—men and women no better, no worse on the average than the rest of us. When we do that and cease to rely on ourselves, look what happens:

Government paternalism decreases local responsibility for local affairs and increases the size and cost of the central government. This inevitably leads to higher taxes, reduced personal incomes and less opportunity for the individual citizen to become financially competent. As a result, the amount of venture capital available for new enterprises is cut down, and more and more government intervention is demanded to maintain employment. This process still further increases the cost of government and thus, working in a vicious circle, eventually creates a state of national neurasthenia that deranges the entire social endocrine system. The ultimate outcome is the destruction of democracy and the emergence of some form of authoritarian government. The old Greek historian Polybius was right in observing two thousand years ago that, when there has been "created among the masses an appetite for gifts and the habit of receiving them, democracy in its turn is abolished and changes into a rule of force."

Now no one is more willing than I am to admit that the modern industrial age with all the benefits it has brought to the average man has also created a host of problems for him. In most cases the individual worker no longer owns his tools of production. He can no longer turn readily from factory to farm or from farm to factory as economic conditions change. Frequently he is powerless to find immediate means of support when technologic advances throw him out of work. But as I see it the mistake that we have made is that in seeking ways and means to compensate for such conditions we have slavishly copied procedures that were not developed for our kind of government.

When a transfusion is indicated, the type of the patient's blood must first be ascertained. So it is with the body politic. Whenever governmental intervention is deemed necessary, it should be thoroughly consonant with the activating principles—the social hormones—of our free society. As your Association pointed out in 1850, "our institutions are peculiar." Hence a social security program devised to placate the German people in the 1880's was not necessarily the type best adapted to the United States. Yet, when we did go in for old age pensions on a national scale ten years ago we adopted well-nigh lock, stock and barrel the centralized procedures originally recommended by Bismarck two generations ago. As a result we have a huge bureaucracy on our hands known as the Social Security Administration that costs us tens of millions of dollars a year. Would it not have been far wiser to install a system especially adapted to our own American traditions? Let me be specific: Approximately 3,750,000 workers in the United States were covered by private pension plans in 1929—long before the federal Social Security Act was passed. Suppose our government had set about to expand the development of such voluntary efforts. Several approved programs could have been set up for administration through private insurance companies. The employer could have been encouraged to adopt one or the other of such plans through appropriate tax credits and the right to use some official insigne indicating that the employer had a governmentally approved pension program. Under such procedure no unwieldy bureaucracy would have been required and a goodly portion of the reserves set aside to finance pensions would have been siphoned back at once into the blood stream of industry and commerce, creating more jobs and more production. As it is, the enormous funds that have been accrued are virtually sterile so far as the creation of new taxable

wealth is concerned, since they are either being spent currently for the running expenses of government or invested in non-income producing public works. They actually do not exist except as entries on the government's books. Desirable as the objectives of our social security program are, the means employed have certainly not been those that are best adapted to the genius of our free institutions.

Now the moving finger of history is writing again: A similar centralized system of health and hospital insurance is being urged upon us. Do we intend to repeat the same process and strangle still further the principles of self reliance and local responsibility for local affairs, which are two of the root principles on which our freedom rests? I hope not. And therefore as a citizen I have rejoiced in the growth of the Blue Cross and other voluntary plans for hospital and health insurance which have been formulated and encouraged by this Association and its affiliated bodies.

Of course, the development of such voluntary programs will not satisfy those well intentioned but short sighted humanitarians who demand sweeping and immediate action regardless of the ultimate effect on our national character and way of life. The besetting sin of reformers has always been lack of patience—failure to recognize that, as Dr. Davis observed in 1855, "the whole history of the human race shows that all great and true reforms, whether social, moral or political, proceed slowly." One of the obvious virtues of voluntary plans for hospital and health insurance is that such programs do not require the setting up of ponderous public agencies to run them.

Four hundred years before Christ, Plato said "Democracy contains no long-range force which will check the constant tendency to put more and more on the public payroll." Certainly the truth of this assertion is thoroughly exemplified by the happenings of the past fifteen years. There were some 630,000 civilian employees in the federal government in 1933. The number rose to a peak of approximately 3,826,000 during the war and today stands—nearly two years after the close of hostilities—at approximately 2,247,000. The average cost of each civilian employee is approximately $2,650 per annum. So this huge governmental establishment is one of the factors that have raised federal expenditures to their present fantastic levels.

During the ten seconds that I have held this burning match in my hand the federal government has spent approximately $12,000. Spending is going on at this moment at the rate of $4,200,000 per hour; over $100,000,000 per day; about 40 billions per year. Incidentally, I wonder how many Americans have the faintest conception of what a billion is. If you had employed a thousand men at $5 a day in the year 1398, ninety-four years before Columbus discovered America, and worked them every day, year in and year out, you would have used up your first billion dollars in 1946!

During the war it was necessary, of course, to spend without stint or limit to gain a speedy victory. We find ourselves now, however, confronted with a proposed budget for the fiscal year which starts on July 1 of 37½ billions—equivalent to 37 eight story buildings where each inch of height is a million dollars! State and local expenditures will add up no doubt to another 15 billions. With a total national income estimated at $170,000,000,000, this means that more than one dollar out of every four dollars of value produced will be taken by the tax gatherer during the next twelve months.

Now political freedom cannot long endure in a republic in the absence of a financially competent citizenry. If even a substantial minority of our people became wards of the state, our two party system would evaporate and with it our liberty. Hence the present enormous tax burden creates a fiscal carcinoma that gnaws away at the very vitals of our free society. The American people generally do not realize what has been done to them in the past ten years. The social hormone of thrift that leads to economic independence is already seriously affected by a process of financial metastasis. With income and estate taxes and interest rates at their present levels it is now virtually impossible for a young man starting at scratch, in either a profession or in business, to accumulate a competency for his own later years and his family after he is gone. Thus the faith and courage of our people are being insidiously weakened as the prospect of a self-respecting and independent old age fades and disappears. The present personal income taxes, corporate taxes, capital gains taxes and the ever present threat of taxes on accumulated surplus make the development of small businesses in the future a well-nigh insurmountable task and seriously handicap the growth of many existing enterprises. Yet the expansion of existing businesses through the plowing back of earnings and the constant injection of new enterprises into the economic blood stream of our national economy are absolutely essential to the continued operation of our private, competitive business system. If funds for such purposes cannot be had from private sources and government supplies them, state socialism automatically results.

Consider too the plight of the one third of our population who allegedly are ill nourished, ill housed and ill clad. In the last analysis who but the financially competent among us can help that situation? Of course, government can tax away the savings of the competent of this and past generations and distribute them, but eventually when this accumulated fat is gone where is new productive wealth to come from in a free society if not from the ingenuity, initiative and thrift of the competent? It is therefore high time, it seems to me, for all believers in American liberty to raise their voices in behalf of the two thirds of our citizens who have proved able to take care of themselves and thus show some concern for the original "forgotten man" of William Graham Sumner—the quiet citizen who paddles his own canoe day in and day out, marries and raises a family, meets his bills promptly, pays his taxes, supports his church, contributes to the community chest, fights for his country when need arises, asks nobody to protect him from "cradle to the grave" and thereby does his quiet bit to maintain the American republic for his children and his children's children!

The moving finger writes. Little or no consideration has been given thus far to the ultimate effect of "cradle to the grave" paternalism on our standard of living.

When virtually all responsibility for the ordinary hazards of life are removed from the individual's shoulders, when the Biblical injunction "in the sweat of thy face shalt thou eat bread" is nullified, when a job hangs not on every limb but on every twig, what motive is left that is sufficiently impelling to insure the full production on which our high living standard depends? Personal pride, of course, may drive some men on, despite the fact that under present surtaxes the individual may find himself—figuratively speaking—netting one dollar for his first hour's work, seventy-five cents for the second hour, fifty cents for the third hour and fifteen cents for the fourth hour! But those for whom pride of accomplishment is a sufficient reason for giving the best that is in them are a microscopic minority of our whole population. In the absence of a certain modicum of fear as to what may happen if a man does not produce all he can, what is going to keep production at high levels in the face of full employment?

Sir William Beveridge, the great apostle of government planning to insure full employment, has never been able to answer that question. He fails to come to grips with it in his books and indulged in a lot of wishful thinking about it when pressed for an answer over the luncheon table. When the old proved hormones of self reliance, personal initiative, thrift and the willingness to work are neutralized by the virus of government paternalism, a sort of spastic paralysis ensues in the body politic. The wellsprings from which our high living standards flow are choked. The fountains of political freedom dry up.

Men apparently cease to exert themselves in about the same proportion that the state assumes their support. Then the Russian solution of the problem of full production, namely depriving the drones and laggards of food cards and living quarters, logically follows. Significantly enough, I noted a few weeks ago that one of the left-wing leaders in England was reproaching the Labor Government for not having adopted the Soviet procedure. Fantastic as such a recommendation sounds coming from British lips, it must be weighed in the light of other revolutionary happenings in a country that until recently was a mighty fortress of personal freedom.

You will be as shocked as I was the other day when I learned that no less than seventeen ministries in Great Britain now possess the power to enter private homes without search warrants in enforcing the rules and regulations dealing with the nation's planned economy. The Englishman's house is no longer his castle. Nevertheless, Herbert Morrison, Lord President of the Council, said on May 1 "It is not that we have governed too much, but that in some ways we have not governed enough." Yet here in the United States we have certain vocal advocates of the so-called "middle way"—that mythical type of government that could allegedly take over the planning of our economic affairs and still preserve our political, intellectual and spiritual freedom.

As I understand it, when the secretion of the adrenal glands is interfered with, Addison's disease ensues. The patient, among other symptoms, becomes terribly nauseated and, unless the endocrine deficiency can be soon compensated for, the malady is inevitably fatal. So it is with class consciousness in a representative democracy. When the hormone of social cohesiveness disappears in the body politic, history shows that the decline and fall of popular self government is sure to follow. In recent years class feeling has raised its ugly head in America. We have seen the rapid emergence of labor groups, farm groups, youth groups, veterans' groups—some of which class divisions have, sad to relate, been intentionally accentuated for partisan political purposes. The nation has been subjected to repeated attacks of violent economic nausea which now bid fair to result in political lesions of a horizontal nature instead of the vertical cleavages that have characterized our political contests in the past. The moving finger writes. In the face of the portentous record it has made of rising class consciousness in recent years, the patriotic citizen will spare no effort to restore that basic spirit of national unity on which the preservation of democratic government depends. It is later than we think.

THE DUTIES OF CITIZENSHIP

Francis Quarles—the old English poet—made this sardonic observation in the year 1638: "Physicians, of all men, are most happy. Whatever good success soever they have, the world proclaimeth; but what faults they commit, the earth covereth." Certainly there is one fault of doctors—and plenty of the rest of us too—that the future will not conceal, namely our apathy in respect to the duties of citizenship. The events of the past fifteen years have proved definitely that mere professional or managerial proficiency is not enough to preserve the environment of freedom. Too high a degree of self-centered specialization in the learned professions or in industrial management is self defeating in the field of politics and public relations. Many of us have become so absorbed in handling our personal jobs efficiently that we have forgotten that the game itself cannot continue very long if the fields—local and national—on which it must be played are not kept in good order. In other words, as you doctors have concentrated on being highly skilled professional experts and we men in industry on trying to be able managers, we have far too often become poor citizens and left the affairs of the major league—the national economy—to politicians and reformers. If our type of free society is to be preserved, professional and business men must not only be good technicians but also good citizens in every sense that those words imply. Civic virtue—the willingness to work and sacrifice for the public interest—is an indispensable hormone of freedom. A deepened and broader concern with public affairs on the part of the medical profession generally would add further luster to its well earned reputation for unselfish service so aptly expressed in Lord Bryce's pithy comment "Medicine is the only profession that labors incessantly to destroy the reason for its own existence."

Of all the hormones that have united to create what we call the American system, the most fundamental is the value that we have given to human personality. No former people has ever conceived of individual human dignity and worth in terms which have been common to us. This concept has a distinctly religious origin which can be traced back to the fifteenth century, when John Wyclif first placed his translations of the New Testament in the hands of the common people of England. How deeply rooted this concept became in the generations that followed is evidenced by John Adams's

assertion, when the Constitution was under discussion, "You have rights antecedent to all earthly government; rights that cannot be repealed or restrained by human laws; rights derived from the Great Legislator of the Universe." Today, unfortunately, far too many people define the dignity of man in terms of his physical scale of living rather than by his moral and spiritual standards.

There, it seems to me, is the basic issue in the current world crisis. If one believes that as individuals we are endowed with certain divinely given, inalienable spiritual rights, then our system of government, our free economy, our civil liberties, have a firm foundation on which to rest. If the existence of such natural rights is denied, collectivistic principles displace the individualistic principles on which personal liberty depends. And to make collectivistic principles supreme requires inevitably the submergence of the individual and the emergence of the controls of the totalitarian state. Hence, without being a pietist or the advocate of any particular type of religion, one must recognize, it seems to me, that the idea of a sovereign God endowing the individual with certain inalienable spiritual rights is fundamental to the permanent existence of the American system. Here every thinking citizen might well examine the inner recesses of his own soul and determine conscientiously how best he can contribute toward the revival in America of that supreme hormone of liberty—the concept of the sacredness of the individual in the eyes of a sovereign God.

The Greeks said "Know yourself," the Romans "Be yourself," the Christians "Give yourself." The cult of civic competence—as our fathers knew and practiced it, fused these three swords of the spirit into the great instrumentality that set them free. To remain free we, their descendants, must pay the same price they paid, for freedom is not a gift of heaven. It must be won and rewon by every generation for itself. It is not ours for the asking, as so many complacent Americans seem to think. It is ours only for the taking—through competent personal effort in support of the eternal principles on which it rests.

The moving finger writes. What it writes about this fair land of ours in the momentous months and years ahead depends not on this thing we call government but on you and me and millions like us scattered all over America. As citizens we are masters of our fate, the captains of our national soul. Shall we let our priceless heritage of freedom go by default? Shall we permit the old historical cycle to repeat itself in America: From fetters to faith, from faith to freedom, from freedom to folly, from folly to fear and from fear back to fetters once more?

The moving finger writes. We sit here tonight at this banquet board celebrating the splendid achievements of that great company who during this century past have gone before us on life's journey and left the world better because they passed through it. It is fitting so to do—to add to our meed of praise and grateful appreciation. But as we do so in humility and reverence we might well descry again that moving finger of a bygone day, as it recorded its fateful message on the wall of Belshazzar's banqueting hall twenty-five hundred years ago, firmly resolving that it shall never be written of us twentieth century Americans that we were "weighed in the balance and found wanting" in the age-old struggle for human freedom.

THE AMERICAN WAY

Address at Centennial Dinner, American Medical Association, Atlantic City, N. J., June 7, 1947

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I think I speak with modesty when I say that in the last quarter of a century, because of the opportunity I have had to work in the fight against infantile paralysis, no layman in this country has had closer or more contacts with the members of the American Medical Association than I have had. That experience in itself has made life tremendously interesting.

Each year I continue to be more than before amazed by the amount of time, thought and energy that the members of this great organization give to all the health, welfare and humanitarian organizations in this country, to say nothing of the charitable service which they give all over our land to the individual directly.

How these men can travel back and forth across the country to attend medical meetings from which comes the advice so badly needed by these health and welfare organizations; how they find time to study the problems these organizations have and still pursue their professional calling are still mysteries to me.

I am glad, therefore, to be here tonight if for no other purpose than to pay my respects to this great body of men and to say that in my time I am certain that no group has made a greater contribution to the American way of life than have the members of the American Medical Association.

In the advancement of our American way of life we have gradually developed patterns of thought and action which would in many instances seem to be the inevitable development of a democratic civilization such as ours. The whole world has become more and more security minded. There was a time when an American citizen thought that the only necessity of life was a job for the father, who then assumed the responsibilities for the care of his family, including such fundamentals of living as food, clothing, housing and medical care. The one contribution which he expected from his government was a public system of education so that every child born in a free nation would be given opportunity to develop to the utmost his intellectual faculties.

Under this concept of life we developed in the United States an independent people whose progress toward attainment of a high standard of living was greater than that of any other nation in the world, and no one can appreciate that more than I can, having just returned from another three weeks in Europe and Italy. True, the natural resources of our country played a considerable part in this result, as did also no doubt its climate and the building of a special type known as the American product of a melting pot to which all the peoples of the world made their invaluable contribution.

With the turn of the century came the introduction of new technics of mass production, first in the automobile industry and then gradually extending to every other type of industrial life. There are those, of course, who think that the tendency of such methods is to submerge the artist and craftsman and to level the mass of the people. No doubt much of the interest of the worker in his job was lost when he became a unit on a production line.

In 1883 the concept of social security was introduced in Germany—a concept that was strongly recommended by the ruling agencies of most European nations and indeed by practically all nations in which a small ruling class dominated the people. It introduced a system whereby the individual looked to the state to provide him and his family with many of the essentials of life and living that American workers were accustomed to provide for themselves. The state began to be responsible for education, for housing, for medical care, for the care of the aged, for employment, for relaxation, for protection and for the care of the veteran.

Some states moved more rapidly in this direction than did others. In Germany, for instance, the state assumed more and more of these responsibilities and increasingly took a share of the workers' wages and of the employers' income to support a swollen bureaucracy that administered the system. England displayed little interest in such proposals until 1912, but today Great Britain, with the rise of a socialist and labor party, seems to be moving toward the same governmental assumption of responsibility for every aspect of the individual citizen's activities that marked prewar Germany.

Now there are many who believe that Germany moved inevitably toward the totalitarian system that enslaved her people and destroyed their morals and broke down even the ethical tradition of her medical profession as a result of the extent to which the citizens lost more and more of their personal responsibilities. The Russian civilization is comparable in many of its aspects.

Now in the United States our people thought little of social security until the great depression of 1929, when it became necessary for the government to assume complete responsibility for vast numbers simply because of the rise of unemployment and the increasing age of our population. In planning to meet these contingencies, the Congress passed a federal security act which compelled the worker and the employer to set aside funds to care for those who are unemployed for at least a certain length of time and to provide a minimum of money for the aged with which they may purchase the necessities of life. The then President of the United States, Franklin D. Roosevelt, urged the devotion by the Congress increasingly of funds to care for the indigent and to aid particularly those states which were unable with their own resources to maintain a suitable level of disease prevention and medical care.

In the evolution of this society the people of the United States, as I have said, have developed certain patterns of conduct, certain types of finance, in considerable contrast to methods that prevail elsewhere. I think it very essential that from time to time these patterns of conduct be emphasized to the American people so that they may realize more and more how their needs are met and the part which they themselves play as free citizens of a democracy in assuring to all the people of our country a quality of security above that available anywhere else in the world. I refer, of course, to the growth of our great philanthropic agencies, such as the American National Red Cross, National Tuberculosis Association, American Cancer Society, American Heart Association, National Foundation for Infantile Paralysis, National Society for Crippled Children and Adults and many other similar groups. These organizations of a peculiarly American type are maintained by funds derived from the mass of the people. The money is given to them voluntarily by people who are convinced of the good that they do. The organizations are led by individuals who join together for the common good and who in the vast majority of cases devote themselves to the advancement of these organizations without any thought of emolument in terms either of money or of prestige.

There is among these organizations a friendly rivalry not only in seeking the funds by which they live but in the maximum accomplishment that they may attain with such funds. To the services of these agencies the medical profession devotes vast amounts of time and professional talent and even its own funds. The good that these organizations accomplish needs no recapitulation to the American people.

Where else in the world can a patient suffering with a crippling disease be given all the benefits of a modern hospital, the best possible attention of orthopedic surgeons and physical therapists and psychologists and mental hygienists and nutritionists, without thought of the immense costs that are involved? Where else in the world are millions of dollars freely contributed by the people devoted to the establishment of cancer detection centers in great numbers, whose services are available for whatever the patient can afford to contribute? Where else in the world is money contributed voluntarily by the people to the advancement of scientific research—yes at times in sums which even the scientists cannot use effectively?

Associated with this pattern of the individual philanthropies are the new technics for meeting the costs of medical care involved in the highly intensified growth of voluntary hospitals and sickness insurance plans. The hospitalization plans now provide for hospitalization of some 30 millions of people who have enrolled, and the economist can see the reaching of a saturation point of perhaps 60 millions of people within the next decade. The voluntary nonprofit sickness insurance plans have already enrolled more than 6 million people, and the private voluntary sickness insurance plans claim between 23 and 25 million workers. The American people are the best insured people in the world, with some 75 million people enrolled and total assets of some 40 billion dollars. There was no compulsion or coercion in attaining this height. The people acted in response to the usual methods by which American industries, American philanthropies and indeed American institutions have been built.

That the health and welfare problems of our country which affect at one time or another every one of our people are primarily in the public domain as an essential function of government at some if not at all levels, no one need deny. But time has shown again and again that, unless that governmental function is stimulated and supplemented by the activity of the great private health and welfare agencies, the best interests of the people are not fully served. Governmental officials would be the first to admit this. But we must never forget that the strength of such private agencies is in their voluntary and independent nature. Without their identity, integrity and independence these private agencies could not exist. The emotion, the effort, the service that the American people give and give so willingly and freely through such organizations cannot be bought or compelled.

The point of view of those who would coerce rather than invite, who would direct rather than cooperate, who would compel rather than educate, need not necessarily be achieved only by making government the coercing force. Deceived perhaps by the magnificent results that have been achieved by many of the volun-

tary agencies, envious perhaps of the response of the people to some appeals and their failure to respond similarly to others, there are those who propose from time to time new types of organization of voluntary agencies which would place the compulsion not on the people who support and who receive the benefits from them but on the leadership of the agencies themselves. I refer particularly to a report of a survey of philanthropic agencies especially in the health field which suggested the establishment of a central group with a permanent directorate which all agencies would join and which would by their joining be compelled to accept the dictums of the central directorate as to the time when they would seek their funds, as to the methods by which they would seek their funds, as to the amounts of money which they could use and the manner in which their funds would be distributed. I venture to doubt that such a plan would produce the efficiency that this leadership seeks. I venture to doubt that the agencies which would be thus united would in the long run gain by their union. I have no hesitation in saying that those agencies would by this method bring about their own destruction.

Most serious of the losses involved by such technics would be the loss of the humanity which is fundamentally responsible for the great success that our philanthropic health agencies in this country have had up to now. Every individual who contributes now feels that he is helping another human being like himself. He sees the results of the aid that he gives, not in just any sick person, but in a child with poliomyelitis, a person with cancer, a worker crippled through the accident of industry, another human being who has been unable to resist the stresses and strains of our modern mechanized life and who has fallen by the wayside and who needs a helping hand. He gives not to an abstraction. He gives to one of his fellow men. . . .

When we think of totalitarianism I'm sure that we think of it only in terms of government. There may, however, still be even more dangerous forms of totalitarianism in industries, in machine politics, even in voluntary philanthropies. Individual agencies must maintain their independence from collectivism even as individual citizens must oppose a totalitarian government. In the industrial life of our nation there is an aphorism to the effect that one does not experiment with an established success. Our government, our resources, our philanthropics, our standard of living are today the envy of all the world. True, there are among us those who do not have all the benefits that derive to the majority; but it is not the American way to lower the majority to aid the indigent and the incompetent.

Although the American way is partly through government, it is supplemented to a very large extent by private philanthropy in aiding and assisting the less fortunate so that they may participate in and enjoy our standard of life. But even more important than that, it always has been and still is an essential function of private health welfare and humanitarian organizations to eliminate those things which cause the unfortunate minority. These things the nongovernmental organizations of America can do only if they maintain, as I am so certain the American people wish them to maintain, that identity, integrity and independence without which they cannot function and with which they can continue to carry on not only the work they do so well today but can accomplish in the future those results still so badly needed by the people in our country.

THE EPIDEMIOLOGY OF POLIOMYELITIS

Problems at Home and Among the Armed Forces Abroad

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One of the most important and difficult jobs in science is to ask the right question of nature. The right question leads to the design of those experiments or tests which yield the pieces that are required to make a logical pattern out of an incomprehensible jigsaw puzzle. My paper will present more questions than answers, and I hope that among the many that have been asked those questions may be selected that will guide physicians to what must be learned in the future if the origin and evolution of epidemics of poliomyelitis is to be understood and if physicians are ultimately to know what, if anything, can be done to prevent them. From the point of view of public health the chief importance of poliomyelitis as a disease lies in its paralytic manifestations, and the main problem in the epidemiology of poliomyelitis concerns the cause or causes of the sudden appearance in certain parts of the world of large numbers of paralytic cases.

It has been stated that no circumstance in the history of poliomyelitis is so baffling as its change during the past fifty to sixty years from a sporadic to an epidemic disease.[1] While there are justifiable doubts regarding the adequacy of diagnosis and reporting in former years, the bulk of the evidence suggests that the epidemic outbursts, of the type which have occurred especially in the United States and a few other countries in the past thirty to forty years, are events that could not readily have been missed in the past. As a matter of fact it has been pointed out, and in my opinion correctly, that more adequate diagnosis and reporting are the effect rather than the cause of increased incidence. Nor can this recent origin of epidemics, although not of the disease, be doubted when it is realized that there are still large parts of the world, regardless of latitude, in which epidemics of poliomyelitis are as yet unknown. Another peculiar circumstance which may contain an important clue is that epidemics have occurred with greatest frequency and severity in the very countries in which sanitation and hygiene have undoubtedly made their greatest advances. In my opinion one of the most important problems in the epidemiology of poliomyelitis is the determination of the factors relative to the virus, host and environment, which are different in cities like New York, Chicago, Minneapolis, Los Angeles and Denver, among many others in the United States with histories of large outbreaks of the disease, and cities like Peiping, Tientsin and Shanghai, occupying approximately the same latitude in China, in which only rare sporadic cases have been recorded thus far, despite the presence in these cities for many years now of excellent western-trained physicians who could not have missed such outbreaks in the native population if they had occurred. Next in importance among the questions that may be asked with regard to the epidemiology of poliomyelitis

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1. Poliomyelitis, Report of International Committee for Study of Infantile Paralysis, Baltimore, Williams & Wilkins Company, 1932.

is why paralytic poliomyelitis, with only rare exceptions, remains practically dormant during more than two thirds of each year, appearing in only an occasional person, and then seems to explode during the late summer and early autumn? Still another circumstance, for which a correct explanation would reveal much regarding the character of the soil in which epidemics grow, is to be found in the many observations that when epidemics make their first appearance in large urban centers (whether thirty to forty years ago, as in certain cities of the United States, Sweden and Australia, or in the more recent past in a few cities of Japan) approximately 80 to 90 per cent of all the cases of paralysis occur in children under 5 years of age; whereas, in recent years in certain American, Swedish and Australian cities the age incidence has changed so that now as many or more children become paralyzed in the 5 to 9 year age group as in the group under the age of 5, and in many parts of the United States 25 to 33 per cent of all paralyzed patients are now in the 10 to 19 year age group.[2]

In order to be able to analyze these basic questions one must have certain information (*a*) about the natural history of infection with poliomyelitis virus in human beings, (*b*) about the reservoir of the virus in nature, (*c*) about the immunologic and invasive characteristics of the poliomyelitis viruses and (*d*) about the immune response of human beings to infection. It cannot be denied even by the most cynical that much has been learned in these fields through the patient and persistent labors of many investigators, even though many gaps in present knowledge still exist. I shall present rather briefly what, in my opinion, may be accepted as established without going into the details of the work on which the conclusions are based and spend more time on the points that I recognize and regard as having an important bearing on the epidemiology of the disease.

To begin with, what can be accepted as established about the natural history of infection in man with regard to how the virus is acquired by human beings, where it multiplies after it gets in and, finally, by what route and for how long it continues to be eliminated. It may perhaps be well to point out that the important extension of knowledge in regard to the presence of the virus in human stools during the past ten years, was not by itself responsible for a change in the concept of the nature of the human disease, since there was no indication that the virus in the stools did not have its origin in swallowed nasal and salivary secretions. Thus, Aycock [3] in 1941 was quick to point out that in pulmonary tuberculosis bacilli may be found in intestinal contents and that hemolytic streptococci from the respiratory tract may also be found in the intestines. However, the extensive studies in recent years on the distribution of virus throughout the human body in fatal cases have indicated that two systems, the alimentary tract and the nervous system, are predominantly attacked.[4] The virus was not found in the nasal mucosa, salivary glands or urinary bladder, to mention only a few of the important zones which were shown to be uninvolved. In the alimentary tract, the virus has now been demonstrated in the tongue and in the walls of the oropharynx, duodenum, ileum and colon. While in some cases the virus could be localized in the tissues of the upper as well as lower levels of the alimentary tract, at times it was limited to one or the other level. It also became apparent that the virus could be found in some portion of the tissues of the alimentary tract in practically all cases of human poliomyelitis, when a sufficient number of levels were tested. Furthermore, an analysis of the distribution of the virus in the entire body indicated that the virus did not get to the tissues of the alimentary tract by centrifugal spread from the central nervous system but rather that it was there as a result of primary localization and multiplication. It still is not known whether the multiplication of the virus, which, judging from its persistence in the stools, may continue for many weeks, occurs in the collections of nerve cells within the walls of the alimentary tract or in the nonnervous elements. The possibility has, of course, been considered that this pattern of virus distribution having been obtained in fatal cases may not represent what is actually occurring earlier in the disease. It may be said, however, that among the 13 fatal human cases studied in great detail by Ward and myself [4] a number of patients died within two to three days after the onset of the first "systemic" symptoms and only twelve to twenty-four hours after the first appearance of signs of involvement of the nervous system, but no significant difference was found in the types of tissues harboring the virus in these cases. The important question of whether or not the virus may be in the blood of human beings at some stage of the disease in sufficient concentration to offer a source of infection to blood-sucking insects was recently investigated with great care by Ward, Horstmann and Melnick [5] who were able to detect it in only 1 of 111 specimens taken from patients in early stages of the disease. This observation together with the earlier demonstration by Ward and myself [6] of the presence of the virus in a pool of the viscera in 1 of 7 fatal human cases tested, would suggest that occasionally small amounts of the virus may be absorbed into the blood from foci in which the virus is multiplying, but there is no indication that blood-sucking insects could acquire significant amounts of the virus from human beings.

The many studies which have now been carried out on the elimination of the virus from the human body indicate that it would have to originate either from the pharynx or the stools. Recently Howe, Wenner, Bodian and Maxcy [7] were able to demonstrate the virus in 43 per cent of oropharyngeal swabs taken from 23 patients during the first three days of illness, but in none of 13 swabs taken from the fourth to the ninth day of the disease. Horstmann, Melnick and

2. Dauer, C. C.: Poliomyelitis in the United States in 1942, and a Summary of Its Prevalence from 1933 to 1942 Inclusive, Pub. Health Rep. 58:937 (June 18) 1943.

3. Aycock, W. L.: Susceptibility to Paralysis in Poliomyelitis, Illinois M. J. 80:231 (Sept.) 1941.

4. (*a*) Sabin, A. B., and Ward, R.: The Natural History of Human Poliomyelitis: Distribution of Virus in Nervous and Non-Nervous Tissues, J. Exper. Med. 73:771 (June) 1941. (*b*) Sabin, A. B.: Studies on the Natural History of Poliomyelitis (Bela Schick Lecture), J. Mt. Sinai Hosp. 11:185 (Nov.-Dec.) 1944.

5. Ward, R.; Horstmann, D. M., and Melnick, J. L.: The Isolation of Poliomyelitis Virus from Human Extraneural Sources: IV. Search for Virus in the Blood of Patients, J. Clin. Investigation 26:204 (March) 1946.

6. Footnote deleted by author.

7. Howe, H. A.; Wenner, H. A.; Bodian, D., and Maxcy, K. F.: Poliomyelitis Virus in the Human Oropharynx, Proc. Soc. Exper. Biol. & Med. 56:171 (June) 1944. Howe, H. A.; Bodian, D., and Wenner, H. A.: Further Observations on the Presence of Poliomyelitis Virus in the Human Oropharynx, Bull. Johns Hopkins Hosp. 79:19 (Jan.) 1945.

Wenner,[8] following up this work, were able to recover the virus from the pharynx in only 2 of 19 patients (11 per cent) during the first week of illness and from none in the second week. The work of Horstmann, Ward and Melnick[9] on the persistence of the virus in stools after acute infection, indicated that the virus could be recovered in 70 per cent during the first two weeks, 50 per cent during the third and fourth weeks, 27 per cent during the fifth and sixth and 13 per cent during the seventh and eighth weeks. They found one stool positive at twelve weeks after onset out of 30 tested between the ninth and twelfth weeks and none of 23 after the twelfth week. The longest persistence on record was that reported by Lépine and his associates,[10] who recovered the virus from the stools of a child one hundred and twenty-three days after a mild abortive attack of poliomyelitis. In earlier studies by Ward and myself [10a] on a group of 20 patients during the first two weeks of illness, no virus could be recovered from the nasal secretions or the saliva and other secretions as they were expectorated over a period of three days. Ward and Walters[11] have recently reported that in extracts of cloth masks worn by children for periods of thirty minutes during the first three days of illness, they were able to detect the virus in 2 of 19 tested. It should be noted, however, that these patients were induced to blow and cough into these masks, activities which are not common for the poliomyelitis patient who, as a rule, does not have the nasal or tracheobronchial irritation which is present in infections affecting the upper part of the respiratory tract. It is also noteworthy that in a least 5 of Ward's patients from whom virus was recovered by throat swabs none was demonstrable in the masks into which they talked, blew, coughed and spit for one-half hour. It is fair to say that there is at the present time a difference of opinion as to whether droplets originating from the pharynx or the various means of dissemination which are possible for the virus in the stools play the dominant role in the spread of the disease.

One of the important issues in this respect is the extent to which infectious material present in the throat can under ordinary circumstances reach the environment in the form of droplets, which in the wet or dry state may subsequently be inspired by others. For as regards transmission by contact with hands and fomites, the opportunities for contamination from the stools would seem to be so much greater that the transitory presence of virus in the posterior pharyngeal wall would add little to this aspect of the problem. The interesting studies of Hamburger and his associates[12] on carriers of hemolytic streptococci seem to me to have considerable bearing on this problem. Their studies revealed first of all that those who are strictly throat carriers are relatively unimportant in the spread of infection, whereas those with strongly positive nose cultures are the dangerous carriers. They furthermore concluded that blowing the nose is the most important of the respiratory activities which result in dissemination of hemolytic streptococci under epidemic conditions and that contamination of the hands resulting from this act was probably the most important factor. However, extensive contamination of the hands by hemolytic streptococci was found in nasal carriers, but little in carriers with positive throat cultures but negative nose cultures. Talking or breathing did not result in the expulsion of significant numbers of streptococci, and relatively few were expelled by coughing. Sneezing usually resulted in the expulsion of a few streptococci in throat carriers but of many in nasal carriers, despite the fact that most of the droplets produced by a sneeze originate in the mouth. If one recalls, therefore, that the throat and not the nose or saliva is the source of virus in poliomyelitis, and that except for those with disturbances in swallowing the people who carry the virus of poliomyelitis do not usually have the nasal or tracheobronchial irritation which goes with infections of the upper part of the respiratory tract, one would not expect droplets to be a significant source of infection. Furthermore, if the aspiration of infected wet or dry droplets was an important source of infection in poliomyelitis, one would expect frequent invasion of the central nervous system from the nose by way of the olfactory pathway, which has now been amply demonstrated not to occur in human beings.[4] It may also be worth adding that while other droplet-transmitted infections have their own special prevalence during the late autumn, winter and spring, none has the seasonal incidence of poliomyelitis. For all these reasons, and quite aside from the fact that poliomyelitis virus is present in the pharynx for only relatively short periods of time, I am inclined to regard the various means of dissemination, both direct and indirect, which are possible for virus in the stools as playing the dominant role in the spread of the disease.

The circumstance of the stools being the most abundant source of the virus would have had little significance for the epidemiology of poliomyelitis, if it had not been established beyond doubt in recent years that experimental oral infection can be readily achieved. The controversy which existed less than ten years ago on this question was due to the fact that in the few reported successes infection by the olfactory pathway had not been ruled out and in the many reported failures the work was done usually in rhesus monkeys with virus that had been passaged for many years in the brains of monkeys. The controversy has been resolved by the demonstration that strains of virus of recent human origin could produce paralytic poliomyelitis by the oral route in chimpanzees [13] and cynomolgus monkeys [14] with considerable regularity without

8. Horstmann, D. M.; Melnick, J. L., and Wenner, H. A.: The Isolation of Poliomyelitis Virus from Human Extraneural Sources: I. Comparison of Virus Content of Pharyngeal Swabs, Oropharyngeal Washings, and Stools of Patients, J. Clin. Investigation **25**: 270 (March) 1946.

9. Horstmann, D. M.; Ward, R., and Melnick, J. L.: The Isolation of Poliomyelitis Virus from Human Extraneural Sources: III. Persistence of Virus in Stools After Acute Infection, J. Clin. Investigation **25**: 278 (March) 1946.

10. Lépine, P.; Sedallian, P., and Sautter, V.: Sur la présence du virus poliomyélitique dans les matières fécales et sa longue durée d'élimination chez un porteur sain, Bull. Acad. de méd., Paris **123**: 141, 1939.

10a. Sabin, A. B., and Ward, R.: The Natural History of Human Poliomyelitis: Elimination of the Virus, J. Exper. Med. **74**: 319 (Dec.) 1941.

11. Ward, R., and Walters, B.: The Elimination of Poliomyelitis Virus from the Human Mouth or Nose, Bull. Johns Hopkins Hosp., to be published.

12. Hamburger, M., Jr.; Green, M. J., and Hamburger, V. G.: The Problem of the "Dangerous Carrier" of Hemolytic Streptococci: I. Number of Hemolytic Streptococci Expelled by Carriers with Positive and Negative Nose Cultures, J. Infect. Dis. **77**: 68 (July-Aug.) 1945; II. Spread of Infection by Individuals with Strongly Positive Nose Cultures Who Expelled Large Numbers of Hemolytic Streptococci, ibid. **77**: 96 (Sept.-Oct.) 1945; IV. Observations upon the Role of the Hands, of Blowing the Nose, of Sneezing, and of Coughing in the Dispersal of These Microorganisms, ibid. **78**: 33 (July-Aug.) 1946.

13. Howe, H. A., and Bodian, D.: Portals of Entry of Poliomyelitis Virus in the Chimpanzee, Proc. Soc. Exper. Biol. & Med. **48**: 718 (April) 1941.

14. (*a*) Burnet, F. M.; Jackson, A. V., and Robertson, E. G.: Poliomyelitis: Use of Monkey Cynomolgus as an Experimental Animal, Australian J. Exper. Biol. & M. Sc. **19**: 273 (Dec.) 1939. (*b*) Sabin, A. B., and Ward, R.: Behavior of Poliomyelitis Virus in Cynomolgus Monkeys Infected by the Oral Route, abstracted, J. Bact. **45**: 86 (Jan.) 1943. (*c*) Sabin.[4]

invading the central nervous system by the olfactory pathway. The importance of the strain of virus was particularly demonstrated in simultaneous experiments in my laboratory [15] in which a strain of recent human origin readily infected cynomolgus monkeys by the oral route while the old, virulent monkey-passaged M. V. strain of virus, with which almost all the unsuccessful tests had been reported in the past, failed to produce infection by the same technic in the same species of monkey. It may be worth noting here that there is no evidence now that infection by the oral route may not be possible even in rhesus monkeys, provided the proper strain of virus is used.

The abundance of the virus in human stools together with the demonstration of its presence in sewage [16] has, by analogy with the bacterial enteric infections, naturally raised the question of the possible role of flies and drinking water in the causation of epidemics of poliomyelitis. The first extensive work on flies in relation to outbreaks of poliomyelitis was done in 1941 by Paul and Trask and their associates,[17] who recovered the virus from flies trapped in rural areas close to a potential source of virus in the form of exposed recently evacuated human feces, and simultaneously by Ward and myself,[18] who recovered the virus from flies trapped in urban areas. We were able to demonstrate the virus in 7 of 12 samples from Cleveland and in 1 of 3 from Atlanta under circumstances in which no obvious potential source of the virus was in evidence within a short distance of the traps, which were put out in the backyards of the homes of patients who were away in the hospital and where the other probable virus carriers used good flush toilets. The flies which yielded positive results were either of the blowfly or housefly varieties. Three years later Ward, Melnick and Horstmann [19] carried this work a step farther during an outbreak in North Carolina by demonstrating that the food which was exposed to flies in homes of poliomyelitis patients became contaminated with enough poliomyelitis virus to be capable of establishing the infection in chimpanzees that ate it. The high incidence with which virus could be demonstrated in flies caught even in some of the cleanest and most sanitary urban areas cannot, it seems to me, be dismissed as an incidental finding without epidemiologic implications. It must mean that at some time or other, somewhere in the vicinity within a radius of 1 or more miles, the flies must have had the opportunity to pick up the virus. Even if the virus were to undergo no multiplication within the flies, and this has not yet been adequately investigated, it would seem clear that as long as myriads of flies have the proven capacity to acquire and transport the virus and the obvious capacity to contaminate human food with it—and in view of the fact that the possibility of infection with poliomyelitis virus by mouth is now established beyond doubt, it is not difficult to visualize the important role that flies may play in the dissemination of the virus during the summer and early autumn months. That is not to say that outbreaks of the disease during any season may not occur in the absence of flies or that in the combination of a source of virus, enough flies and an adequate number of susceptible persons one has all the ingredients to explain an epidemic of poliomyelitis; but it may indeed be suggested that the special seasonal character of the majority of poliomyelitis outbreaks may be related to the greater dissemination of the virus through the agency of contaminated flies, superimposed on the dissemination through normal human intercourse which has been shown to occur throughout the year, winter [20] or summer. Intimate human contact, while undeniably a factor in the year-round dissemination of the virus and in the so-called radial spread sometimes seen during outbreaks, does not by itself explain the recurrent summer epidemics of paralysis. With the present high incidence of the disease among children of school age in the United States, it is remarkable that, unlike certain other infections of childhood, the epidemics of paralysis occur during the very months when the children are away from school.

All this brings one back to another old question in the epidemiology of poliomyelitis, namely: do more people acquire poliomyelitis virus during the summer and early autumn months, or is there only a difference in the ratio between the number exhibiting the paralytic and inapparent, nonparalytic forms of the disease during the different times of the year? If there was only some way of answering this question by direct laboratory tests instead of by speculation, analogy or evaluation of probabilities, one could end the controversy between those who maintain that certain unknown changes in the host rather than increased dissemination of the virus, are responsible for epidemics and for the greater incidence of the disease in summer. Unfortunately, the methods available at this time are so cumbersome and expensive that one cannot undertake a mass survey of the number of people carrying the virus in a given community at different times of the year, as one might, for example, in the case of typhoid, dysentery or diphtheria; and the difficulties that would be encountered in trying to do it by determining the appearance of antibodies will become apparent, when the types of poliomyelitis virus and immune response to infection are discussed. Perhaps the only lead in existing data, that I know of, is to be found in the periodic tests carried out in Dr. Paul's laboratory [16b] on the same sewer line in New York since 1940. These data indicated that virus could be isolated from the sewage during September 1940 and then again in October 1941 simultaneously with a small increase in the number of clinical cases in the community served by this sewer line, but not during the other months. In further tests carried out by Dr. J. L. Melnick between 1941

15. Sabin and Ward.[15b] Sabin.[15c]

16. (a) Paul, J. R., and Trask, J. D.: Occurrence and Recovery of Virus of Infantile Paralysis from Sewage, Am. J. Pub. Health **33**: 235 (March) 1942. (b) Trask, J. D., and Paul, J. R.: Periodic Examination of Sewage for the Virus of Poliomyelitis, J. Exper. Med. **75**: 1 (Jan.) 1942.

17. Paul, J. R.; Trask, J. D.; Bishop, M. B.; Melnick, J. L., and Casey, A. E.: Detection of Poliomyelitis Virus in Flies, Science **94**: 395 (Oct. 24) 1941. Trask, J. D.; Paul, J. R., and Melnick, J. L.: Detection of Poliomyelitis Virus in Flies Collected During Epidemics of Poliomyelitis: Methods, Results, and Types of Flies Involved, J. Exper. Med. **77**: 531 (June) 1943. Trask, J. D., and Paul, J. R.: Detection of Poliomyelitis Virus in Flies Collected During Epidemics of Poliomyelitis: Clinical Circumstances Under Which Flies Were Collected, ibid. **77**: 545 (June) 1943.

18. Sabin, A. B., and Ward, R.: Flies as Carriers of Poliomyelitis Virus in Urban Epidemics, Science **94**: 590 (Dec. 19) 1941; Insects and Epidemiology of Poliomyelitis, ibid. **95**: 169 (Feb. 13) 1942. Sabin.[18b]

19. Ward, R.; Melnick, J. L., and Horstmann, D. M.: Poliomyelitis Virus in Fly-Contaminated Food Collected at an Epidemic, Science **101**: 491 (May 11) 1945.

20. Ward, R., and Sabin, A. B.: The Presence of Poliomyelitis Virus in Human Cases and Carriers During the Winter, Yale J. Biol. & Med. **16**: 451 (May) 1944.

and 1945, Dr. Paul has reported[21] that the results have always been negative during interepidemic times, although he believes that no final conclusions are possible until more work has been done with more sensitive methods of virus detection, particularly during seasons when the community is free from any increase in clinically apparent cases. Additional data of this sort may be one way to establish that outbreaks of the disease are due to the fact that larger numbers of people are being infected, unless it can be proved, as has been suggested by Kling and his co-workers,[22] that the virus may perhaps multiply in some protozoa in the stools and sewage away from the human body. Evans and Osterud[22a] have tested this hypothesis recently in a well-designed series of tests and have obtained negative results with various species of protozoa and different strains of poliomyelitis virus.

The idea that poliomyelitis is predominantly a waterborne disease has its foremost advocate in Kling[23] of Sweden. While it cannot be denied that water contaminated with virus-containing feces can theoretically be a source of infection, the available evidence is not convincing that the large epidemics occurring in American cities are related to water supply;[24] nor, if epidemics resulted from greater dissemination of virus by means of water, is there any known reason why they should occur during the late summer and early autumn and cease with the appearance of cold weather. The epidemics of dysentery occurring in the summer are usually correlated with flies rather than with water.

One cannot proceed in building the pattern of the epidemiology of any infectious disease without being certain of the reservoir of the causative agent in nature. For many years the assumption has been that the only reservoir of poliomyelitis virus in nature is the human being, and that it shares with certain other viruses like those of herpes simplex and measles the distinction of having no other natural host. The demonstration in recent years that the summer epidemic encephalitides are arthropod-borne and that their occurrence in man is only an accidental incident in the life history of those viruses, which may have a wide vertebrate and nonvertebrate distribution, has been responsible for repeated attempts to reexamine the position of poliomyelitis virus in nature. Despite the fact that poliomyelitis and encephalitis epidemics have occurred side by side in a number of instances during recent years, it has been clear that the epidemiology of the two diseases differs chiefly in that poliomyelitis continues throughout the year, while the summer virus encephalitides of man do not occur in the winter in the absence of the vector. Tests for poliomyelitis virus in various mosquitoes caught in the field, which have been carried out in the laboratories of Drs. J. R. Paul[17] and Thomas Francis,[25] have been negative. It was established a number of years ago that of the usual animals surrounding man young dogs, cats, rabbits, pigs, goats, lambs, calves, pigeons and chickens were not susceptible to poliomyelitis virus[1] and that it was, therefore, unlikely that they might be silent hosts. Pearson and his associates in Dr. Francis' laboratory[26] have recently reported negative results in their search for virus in the tissues or feces of a large variety of animals present in the environment of human cases of poliomyelitis. In the last few years this search has also extended to fish within polluted waters (unpublished studies carried out in 1941 by Ward and myself, and also Toomey and associates[26]) and, by Dr. J. L. Melnick, to birds like sea gulls above such waters[21] but thus far with negative results. The demonstration by Olitsky[27] and Theiler[28] of the many analogies between the spontaneous paralytic virus disease of mice and human poliomyelitis has led to speculation on a possible rodent reservoir of poliomyelitis virus that may be infectious for human beings. The murine poliomyelitis viruses are not pathogenic for monkeys, and there is no evidence that they are pathogenic for man. It would appear, therefore, that there is no reason at this time to modify the original assumption that the only reservior of poliomyelitis virus in nature is man. That does not mean that flies, certain monkeys or other as yet unknown animals may not get the virus under natural conditions from human sources, but it does mean that man is the ultimate reservoir.

There are a number of immunologic problems in poliomyelitis which undoubtedly have an important bearing on the epidemiology of the disease. Perhaps the most important of these is the problem of multiple immunologic types of virus. Although fifteen years have passed since the first data were published indicating that strains of virus isolated in Australia[29] and New York[30] were immunologically different from the standard monkey-passaged virus then in common use, and although this has been amply confirmed in a number of other laboratories in subsequent years, little if anything has been done thus far to correlate this important fact with the march of epidemics. While the data accumulated thus far are clear in indicating that there is more than one type of virus, it is not known whether the known strains fall into two, three or some indefinite number of distinct immunologic types. The determination of specific virus neutralizing antibody as an indicator of the occurrence of inapparent infection has proved a useful tool in elucidating the epidemiology of a number of virus diseases, notably yellow fever and the arthropod-borne encephalitides. For these and other infections it was established that, with few exceptions, the presence of these antibodies was a good index to previous infection with the virus. The same was at first believed to be true in the case of poliomyelitis. Thus, Harmon and Harkins[31] in 1936 collected from the literature the results of poliomyelitis neutralization tests on 512 normal serums, which study yielded the following significant figures: under 5 years of age,

21. Paul, J. R.: Personal communication to the author.
22. Kling, C.; Olin, G.; Fahraeus, J., and Norlin, G.: II. Studies on the Conditions of Life of Poliomyelitis Virus Outside the Human Organism, Acta med. Scandinav. **112**: 250, 1942.
22a. Evans, C. A., and Osterud, K. L.: The Failure of Poliomyelitis Virus to Grow in Certain Protozoa of Sewage, Science **104**: 51-53 (July 19) 1946.
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37 per cent neutralized; 5 to 14 years, 48 per cent, and over 15 years, 73 per cent neutralized. This was believed to be in accord with the concept of widespread, inapparent infection, and because similar tests on serums from native adults in China,[32] the Fiji Islands,[33] Africa and certain other regions,[34] in which only sporadic cases but no epidemics were known to occur, were positive in approximately 90 per cent of the subjects it was assumed that the same type of virus was present all over the world and that infection was widespread even in regions where epidemics were unknown. However, between 1935 and 1939 a number of reports stated that there seemed to be no correlation between an attack of the disease, or the passing of an epidemic through a community, and the appearance of neutralizing antibody, as tested for the most part against a single standard passage strain of virus and occasionally also against some other more recently isolated virus. Thus it was found that 20 to 40 per cent of patients with the disease had antibodies when tested early after onset and that in general no definite increase in antibodies developed during convalescence. Of those who were without antibody early after onset, almost none acquired antibody during convalescence. The results of others, which were fully confirmed by his own studies in Australia, led so critical an investigator as Burnet[35] to conclude in 1939 that "poliomyelitis antibody is not a result of exposure to or infection by the virus of epidemic poliomyelitis." If this conclusion is correct the whole concept that poliomyelitis virus is as widely disseminated in one part of the world as in another, without reference to the occurrence of epidemics, can no longer be accepted without reservations, because it is based chiefly on the results of a small number of neutralization tests whose significance remains in doubt. In the last few years many more neutralization tests have been carried out on normal persons and on acute and convalescent serums of patients with poliomyelitis, using Armstrong's Lansing strain of mouse-adapted virus,[36] and in general the results were the same as those obtained with the monkey virus. This is reasonable because the Lansing virus is immunologically identical with the old standard M. V. strain which had been used in most of the monkey tests. And yet Paul and Trask,[37] and Howitt[38] as early as 1933 and Aycock[33] in 1942 pointed out that in certain patients antibody developed against recently isolated strains but not against the standard monkey passage strain. In 1941 Ward and I[39] had an opportunity to study the immunologic reactions in 1 of our assistants in whom poliomyelitis developed while she was working with a strain of virus of recent human origin. Virus recovered from the stools soon after onset of paralysis was proved to be immunologically identical with the strain of virus to which she was exposed. However, both the original virus and that recovered from the stools were found to be immunologically different from the standard M. V. strain of virus. Serum taken from this patient early after onset failed to neutralize both the monkey virus and the strain with which she was infected. However, the serum obtained during convalescence, although still unable to neutralize the monkey virus, readily neutralized the new strain to which she was exposed. In future studies on the immune response to infection it would seem wise to test the serums from each patient against the virus isolated from his own pharynx or stools and not to assume that a single type of virus is responsible for a single epidemic. It must be clear that until more work is done on the immunologic classification of the poliomyelitis viruses and on the immune response to infection, the available immunologic data will not be of much help in arriving at a clearer picture of the epidemiology of the disease.

Poliomyelitis has occurred among American troops in certain foreign countries, especially the Middle East,[40] the Philippine Islands and during the past summer Japan and North China,[41] in numbers and under circumstances that raise puzzling questions. If the disease were occurring among American soldiers (and this holds true also for the British and Australians[41a]) at a time when the more numerous native children all around them were also having paralytic poliomyelitis, the situation would not be so puzzling—but that was not the case.[42] Sporadic infections occur but outbreaks of any appreciable size apparently do not occur. A report on poliomyelitis in the Philippine Islands published ten years ago[43] stated that 16 of 17 patients with the disease at the Sternberg General Hospital in Manila were Americans. In 1945 there were 246 cases of poliomyelitis with 52 deaths among American troops in the Philippines according to the official reports received by the Office of the Surgeon General. Since the

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42. One important exception to this occurred in the islands of Malta and Gozo in 1942-1943, when a large epidemic of poliomyelitis appeared for the first time in at least forty years. There were 436 paralytic cases among 271,339 civilians and 93.2 per cent of these were in children under 5 years of age. Only 4 cases occurred in Maltese adults (20 to 50 years of age) and none in the Maltese troops. However, 57 cases (all but 2 were paralytic) occurred in the troops of the United Kingdom (20 to 40 years of age), with an incidence of 2.1 per 1,000. Sedden, A. J.; Agius, T.; Bernstein, H. G. G., and Tunbridge, R. E.: The Poliomyelitis Epidemic in Malta 1942-1943, Quart. J. Med. 14:1 (Jan.) 1945.

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end of combat in the Philippines, poliomyelitis has been among the leading causes of death in American troops. Even though only the paralytic cases are reported from there, the incidence of poliomyelitis in American troops in the Philippines has been at least ten times as high as in the Army within the continental limits of the United States during the past two years. Actually, I believe that it is even higher because hundreds of cases which would have been diagnosed as nonparalytic poliomyelitis here are being diagnosed as dengue-like or sandfly-like fevers with pleocytosis under conditions which, in my opinion, would preclude the occurrence of both dengue and sandfly fever. And yet, checks of the surrounding native population revealed no outbreaks of poliomyelitis. Hernando and Alomia,[44] who reported small numbers of sporadic cases in Manila in 1933 and 1934, stated that epidemics of poliomyelitis were never observed in the Philippines. Doull, Hudson and Hahn,[45] reporting on the presence of neutralizing antibodies for poliomyelitis virus in the serum of 9 of 10 Filipinos from Cebu, stated that the disease was unknown there and that no evidence of sequelae were discovered. This past summer I had occasion to observe an outbreak of poliomyelitis among American marines stationed in the Tientsin area of North China. Four men died, 1 was severely paralyzed and at least 25 others had nonparalytic attacks. There was no evidence of an outbreak of poliomyelitis in the native population at the time, and Dr. Grice, a British physician in practice in Tientsin for twenty-five years, informed me that while he not infrequently saw paralytic poliomyelitis in children in the foreign colony he rarely saw the disease among the Chinese. The extraordinarily uncommon occurrence of poliomyelitis among the yellow races living in North China was also reported by Zia [46] in 1930. The 1 isolation of poliomyelitis virus reported from Peiping in 1941 by Yen and Hsu [47] was from a white girl. Scott [48] also commented on the rarity of poliomyelitis in China.

In Japan this year the incidence of poliomyelitis in American and British forces, while considerably less than that in the Philippines, was still higher than in the Army within the continental limits of the United States even if one does not count the large number of patients exhibiting the aseptic meningitis syndrome, in the majority of whom, in my opinion, the most likely diagnosis was nonparalytic poliomyelitis. Two strains of poliomyelitis virus were isolated in Dr. Paul's laboratory from stools of some of these patients which I sent from Japan. Paralytic poliomyelitis is still an uncommon disease in Japan, but small epidemics have occurred in the Osaka-Kobe area between 1938 and 1942, and in these about 90 per cent of the cases occurred in children under 5 years of age (communication from Professor M. Kasahara of the Imperial University of Osaka).

This relatively higher incidence of poliomyelitis among foreign troops stationed in areas in which the clinical disease is relatively infrequent in the native population may be due to the fact that the virus is actually more widespread than in the United States and also that the immunologic types of virus prevailing there may be different from those to which these men had been exposed in their infancy and childhood. If it is suggested that the prevailing viruses are so widely disseminated in these countries that infection is acquired by almost every one early in infancy, then it must be asked why that infection is so inapparent and accompanied by so little paralysis? Is it possible that there is a time in infancy, and it would have to be less than 1 year of age, when infection with poliomyelitis virus is predominantly inapparent and results in lifelong immunity? The reason for setting this time at less than 1 year of age is based on the fact that when epidemics of poliomyelitis make their first appearance in countries where the disease had formerly been seen infrequently almost 90 per cent of the paralytic cases occur in children between 1 and 5 years of age. If there is such a hypothetic period of grace, one would have to suppose that immunity to all prevailing immunologic types is acquired during that short period of time. Does it follow, then, that epidemics begin to occur in a country when large numbers of children fail to acquire the poliomyelitis viruses during that important phase of their life? On the other hand if one assumes, as suggested by Burnet,[49] that "the major factor responsible for the epidemic appearance of paralysis is the occurrence of biologically irrelevant mutation in the virus to an unduly invasive type" and that such viruses have not yet made their appearance in countries like the Philippines or North China, how is one to account for the different behavior of the infection in the native populations and the foreign troops stationed there? If the first appearance of epidemics were due to the introduction of a new immunologic type of virus, one would not expect to find 80 to 90 per cent of the paralytic cases among children under 5 years of age, but rather would expect them to be more widely distributed through the population. And yet, in the recent severe epidemic in Malta,[42] which occurred after a quiescent period of at least forty years, paralysis among the native population appeared almost exclusively (93 per cent) in children under 5 years of age, while the adult troops of the United Kingdom in the area succumbed in relatively large numbers (2.5 per 1,000). To account for the occurrence of 422 paralytic cases in children under the age of 5 among a total (all ages) native population of 271,359 on an immunologic basis, the possibility must here be considered that a type of virus was involved to which the adult Maltese, but not the adult United Kingdom troops, were immune and also that this type of virus had had limited or no dissemination in Malta during the preceding five years.

In conclusion I wish to reiterate what I regard as perhaps the most important question: Why did paralytic poliomyelitis become an epidemic disease only a little more than fifty years ago, and as such why does it seem to be affecting more and more the countries in which sanitation and hygiene, along with the

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47. Yen, C. H., and Hsu, Y. K.: Isolation of Virus from Case of Acute Poliomyelitis in Peiping, with Histopathological Studies, Chinese M. J. 60: 199 (Sept.) 1941.
48. Scott, A. V.: Anterior Poliomyelitis in China, Chinese M. J. 54: 442 (Nov.) 1938.
49. Burnet, F. M.: Virus as Organism: Evolutionary and Ecological Aspects of Some Human Virus Diseases, Cambridge, Mass., Harvard University Press, 1945.

general standard of living, are presumably making the greatest advances, while other large parts of the world, regardless of latitude, are still relatively unaffected? If I have left the reader somewhat bewildered and with the impression that physicians do not know the answers to these and other basic questions regarding the origin and evolution of epidemics of poliomyelitis, I apologize, but I must confess that it was precisely what I intended to do.

ADDENDUM

Public health officers and other physicians frequently seek the advice of "poliomyelitis experts" on what to do during an epidemic. These "experts" are as a rule reluctant to supply even guiding principles because, as has been pointed out in this communication, much remains to be learned about the cause of epidemics and the dissemination of the virus. However, there are certain reasonable measures which may be taken during epidemics with a view to minimizing the chances of infection, even if there is no evidence or assurance that these measures will stop an epidemic of poliomyelitis "cold" as effectively as will the advent of "cold" weather.

Until information to the contrary becomes available, the following guiding principles may, in my own opinion, be offered to physicians:

A. More virus is being disseminated in a community during an epidemic than at other times.

B. Poliomyelitis virus is present for a short time in the throat and more frequently and for a longer time in the intestinal tract and stools of certain apparently healthy people as well as of acutely paralyzed patients during an epidemic.

C. From these sources of infection the virus may be transmitted to others by intimate contact, contaminated hands and fomites. There is no evidence that the virus is ordinarily present in the nose or that droplets emitted from the respiratory tract play a significant role, if any, in the dissemination of the virus.

D. During an epidemic the "filth" flies can be contaminated with the virus, which they can deposit in infective amounts on food, and consumption of such contaminated food can produce the disease.

With these guiding principles in mind, the following opinions are offered on questions which most frequently come up for consideration:

1. Measures designed to minimize spread by droplet infection, such as the closing of movies and churches or the refusal to admit patients with poliomyelitis on general hospital wards are not warranted.

2. Measures designed to diminish the chances of transmission by contact during intimate play of children whether out of school or in school are reasonable and warranted. Public playgrounds and swimming pools should be closed. Schools may be opened or should remain closed depending on whether the avoidance of contact among children can be enforced better in school or out of school. The mere presence of a large number of children in a single room cannot be regarded as conducive to transmission of the virus, while playing, shaking hands or using a common toilet without adequate washing of hands may be. Parents should have the right to decide for themselves whether or not they wish to send their children to school during an epidemic. Avoidance of strenuous physical exercise during an epidemic or in cases of known, intimate exposure is reasonable.

3. Measures designed to minimize contamination of food by flies, whether in stores or in homes, are reasonable and warranted.

4. Measures aimed at the mass destruction of flies by the spraying of DDT from airplanes or other moving vehicles on whole towns after an epidemic has appeared is of doubtful, if any, value.

5. Measures taken to prevent flies from breeding in or having access to the sludge beds and other parts of metropolitan sewage disposal plants and creeks containing raw human sewage are reasonable and warranted.

6. Disposal of stools from patients with poliomyelitis in homes or hospitals into the sewer system without previous disinfection of the virus is not contraindicated, because during an epidemic the sewer system is contaminated with greater amounts of virus by the many persons who are infected and do not know it. Where no flush toilets are available, the stools may be emptied in the privy used by the rest of the family, but special precautions should be taken to prevent access of flies to it.

7. Patients with poliomyelitis can be admitted on general hospital wards but should be treated with so-called typhoid technic. Bedpans used only for 1 patient need only be washed after the contents are emptied into the sewer system; if they are used interchangeably they should be sterilized by live steam. This typhoid technic should be applied for at least four weeks dating from the onset of the first "systemic" symptoms.

8. Bedsheets, towels and other laundry during poliomyelitis epidemics may be regarded as potentially contaminated, and advice in regard to the wearing of gloves and washing of hands by workers handling such laundry before it is washed is reasonable and warranted.

9. Isolation in the home of patients whose disease is diagnosed as poliomyelitis is indicated for at least two weeks and is reasonable for a period of four weeks dating from the first onset of symptoms. The children of such households and older members who may be engaged in the handling of food in stores or restaurants, or whose occupations may bring them into intimate contact with children, should remain at home for a period of at least two weeks. The same procedure may be advocated for other children who may have been exposed in intimate play with members of an infected household. While it is unquestionably true that isolation at best can control only an indefinite fraction of those who may be disseminating the virus, it is nevertheless reasonable to attempt to protect a small number of persons, even if the risk for the community at large may not be affected appreciably by such a measure.

Finally, it is necessary to repeat that all these measures are advocated not with the idea that they will stop an epidemic but rather in the belief that in as far as they are carried out diligently at least some persons may escape infection who might otherwise have become paralyzed.

THE BULBAR FORM OF POLIOMYELITIS

I. Diagnosis and the Correlation of Clinical with Physiologic and Pathologic Manifestations

THE MINNESOTA POLIOMYELITIS RESEARCH COMMISSION
Minneapolis

Despite the fact that most of the deaths from acute poliomyelitis are commonly conceded to result from involvement of the medulla oblongata and immediately contiguous brain centers, comparatively little special attention has been given to this form of the disease by either clinical or laboratory investigators. This obvious neglect of one of the most important aspects of the problem of poliomyelitis can be attributed, in part at least, to two erroneous assumptions. The first of these is that the incidence of the bulbar form of poliomyelitis is low, the 6 per cent figure of Wickman [1] still being relied on by many authorities as a basis of estimation. The second is that there is little to offer the victims of this form of the disease in the way of therapy. It is not unusual, for instance, to hear the glib statement that patients with bulbar involvement are divisible into but two groups, those who will recover spontaneously without any therapy and those who are so severely afflicted that they will die no matter what form of treatment is applied.

Because our experience on the neurologic and pediatric services of the University Hospitals during the recent epidemic in Minnesota (largest in the United States in 1946) was quite at variance with these views, we wish to call renewed attention to the overall importance of the bulbar form of poliomyelitis, emphasizing in particular the need for earlier recognition of pathognomonic signs and for prompter and more intensive treatment. The incidence of bulbar involvement among the unselected cases of the disease in patients admitted to our special emergency clinic, with or without spinal manifestations, was 23 per cent in children under 16 years of age and even higher in patients beyond this age. That symptomatic treatment can be to some avail in many cases of severe bulbar involvement is indicated in an accompanying paper which deals with therapy. These two communications on the general clinical aspects of the subject will be supplemented by a series of detailed reports to be made by our colleagues, who have investigated different phases of the problem.

SYMPTOMATOLOGIC AND PATHOLOGIC CLASSIFICATION OF BULBAR POLIOMYELITIS

A detailed study of symptomatology as related to special functional disturbances observed during life and pathologic changes found post mortem in fatal cases led to a comprehensive classification, which will be reported elsewhere in detail by two of us.[2] While there is obviously a considerable degree of overlapping between the various categories as far as many individual cases are concerned, early recognition of signs or symptoms on the basis of their site of origin has often proved to be of distinct value in both diagnosis and treatment. For the sake of simplicity in terminology, the word bulbar has been used with some degree of license to denote involvement of the entire brain stem, including the medulla, pons and midbrain.

The classification finally evolved to include all cases of the bulbar form of poliomyelitis was the following: (1) those in which the nuclei of the cranial nerves are involved—(*a*) upper cranial nerve group and (*b*) lower cranial nerve group; (2) those in which the autonomic centers are affected—(*a*) respiratory center group and (*b*) circulatory center group; (3) those in which there is combined bulbar and encephalitic involvement—(*a*) diffuse encephalitic group and (*b*) focal encephalitic group, and (4) those in which bulbar and upper spinal involvement are combined.

1. BULBAR-CRANIAL NERVE NUCLEI GROUP

The clinical symptoms of the group of cases in which the nuclei of the cranial nerves are involved has been long recognized in bulbar poliomyelitis. These symptoms are readily noticed and easily explained. They result predominantly from involvement of the motor nuclei of the cranial nerves.

(*a*) *Upper Cranial Nerve Group.*—The upper cranial nerve nuclei group includes involvement of fifth, sixth, seventh and eighth cranial nerves as well as the ocular nerves. This produces the syndromes known as polioencephalitis superior and polioencephalitis inferior of the older literature.[3] For convenience all the various ocular manifestations of bulbar poliomyelitis have been placed in this group, although some of these manifestations are not related directly to the oculomotor nuclei. Isolated ocular neural palsies as well as total external ophthalmoplegias have been described in poliomyelitis.[4] Pupillary disturbances, including Horner's syndrome and hippus, have also been reported. Apparently any combination of palsies may occur. Although ocular manifestations were not common in the patients seen at the University Hospitals, 1 patient suffered a complete external ophthalmoplegia with bilateral ptosis. His pupillary responses were normal. Choked disk was observed on one occasion in a patient who was in a respirator.

Disturbances of mastication result from damage to the motor portion of the fifth cranial nerve. Palsies of the fifth nerve may be unilateral or bilateral and may involve part or all of the muscles supplied by the fifth nerve. On examination the patient may be unable to close his mouth, but in less severe cases it may be necessary to test the movements against resistance. In unilateral lesions of the fifth nerve the jaw may deviate spontaneously when the patient opens his mouth, while at other times the action of the pterygoid muscles must be tested by sideward deviation of the jaw against resistance. Palsies of the fifth nerve were observed on a few occasions in the patients considered in this paper.

Paralysis of the facial nerve was observed fairly frequently among the poliomyelitis patients. It was observed with sufficient frequency to make it unreliable

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2. Brown, J. R., and Baker, A. B.: Poliomyelitis: I. Bulbar Poliomyelitis; Neurophysiological Interpretation of the Clinical and Pathological Findings, to be published.

3. Koplik, H.: Prevailing Clinical Manifestations of Poliomyelitis: Cerebral Type, J. A. M. A. 57:152 (July 8) 1911.

4. Posey, W. C., and Swindells, W. C.: The Ocular Complications of Anterior Poliomyelitis, Ophth. Rec. 25:609, 1916.

in the differential diagnosis between poliomyelitis and Guillain Barré's disease. At times the entire area of distribution of the facial nerves was involved, and at other times the weakness was limited to the upper or lower part of the face.

Bilateral deafness and also vestibular disturbances have been reported in the literature on poliomyelitis.[5] The only symptoms referable to the eighth nerve observed in the University Hospitals' patients were vertigo and vomiting. These were present in a few instances and were distressing though transient, lasting only twenty-four to forty-eight hours. Nystagmus was observed in several patients.

The involvements of the cranial nerves discussed so far hold no threat to the life of the patient with poliomyelitis. They may, however, be annoying, and the residuals may produce definite handicaps. They are of importance, nevertheless, because they make the physician alert to the possibility of the implication of more vital centers. If the symptoms remain strictly limited to the upper group of cranial nerves the prognosis for life should be good.

(*b*) *Lower Cranial Nerve Group.*—Involvement of the nuclei of the lower cranial nerves, particularly the tenth, affords a definite threat to the life of the patient with bulbar poliomyelitis. This nerve in conjunction with the eleventh and twelfth is essential for consummation of the act of deglutition. Brahdy[6] reviewed the function of deglutition in relation to poliomyelitis and came to the conclusion that swallowing is initiated by movement of the tongue forcing the bolus of food through the isthmus faucium. The mylohyoid muscle then forces the bolus into and through the pharynx, the larynx and nasopharynx being shut off from the pharynx. To accomplish this requires innervation of the soft palate, faucial pillars, vocal cords, elevators of the larynx and depressors of the epiglottis. These functions are subserved by the cranial nerves previously named. Peristaltic movement continues the passage of food down the esophagus. Brahdy described the following four types of difficulty in swallowing in poliomyelitis: regurgitation through the nose, accumulation of food or fluid in the pharynx, regurgitation of food from the esophagus and cough due to failure to shut off the larynx.

Patients with bulbar poliomyelitis may have any of these symptoms from involvement of the lower cranial nerves, especially the tenth. On examination, one notices nasal speech and failure of equal movement of the soft palate. There is puddling of saliva in the throat, the patient being unable to handle his secretions by swallowing. These secretions may be so profuse that one is forced to think of the possibility of excessive secretion of saliva. In some, the voice is hoarse due to paralysis of the vocal cords. Laryngeal stridor may be present. Weakness of the tongue may be unilateral or bilateral and may impair the movement of food through the mouth and impede the expectoration of saliva. Weakness of the sternocleidomastoid and trapezius muscles occurs but is not of much immediate importance. Difficulty in swallowing was the commonest sign of cranial nerve palsy in the group of patients with bulbar poliomyelitis at the University Hospitals. Brahdy[6] recorded difficulty in swallowing in 87 of the 123 cases of bulbar poliomyelitis.

Considerable importance must be placed on lesions of the tenth cranial nerve because, as has been noted, such lesions furnish an immediate threat to the life of the patient with bulbar poliomyelitis. With the inability to swallow there is the constant tendency toward pooling of saliva and food in the pharynx. This accumulation produces an obstruction to the airway. A further threat to the airway results from the aspiration of fluid into the larynx or from reflex spasm of the glottis. Lesions of the tenth nerve may also produce impaired innervation of the vocal cords. This may manifest itself by a warning stridor or by a rapid abductor paralysis of the vocal cords with sudden asphyxia and death. Direct laryngoscopic examination of a patient in such an asphyxial crisis showed the vocal cords to be approximated in the midline.[5] Immediate insertion of a Mosher lifesaving tube in that instance reestablished the airway.

Interference with the airway by the accumulation of fluid in the throat has been combated by postural drainage and by suction. This, however, will not prevent approximation of the vocal cords in the midline. The importance of maintaining an adequate airway is apparent when it is remembered that any period of anoxia, whether acute or chronic, can do irreparable damage to nerve cells which are already suffering from an inflammatory disease. A further complication from occlusion of the upper airway is the production of acute pulmonary edema. The following cases are typical examples of involvement of the nuclei of the lower cranial nerves.

Case 1.—C. S., a boy aged 7 years, was admitted to the University Hospitals on July 31, 1946. The past history was not relevant except for a tonsillectomy which had been performed July 12. Two days before the patient's admission general malaise, nausea, vomiting and fever developed. The day before admission he had difficulty in swallowing, and a nasal twang was noticed when he spoke. Abnormal ocular movements were noted by his mother.

On examination he appeared acutely ill. The cranial nerves were extensively involved. The ocular movements were incoordinated, and a horizontal nystagmus was present to both the left and the right. The mouth could not be opened. The masticatory muscles were tender. Weakness of the right facial muscles was present. He was unable to swallow, and his voice was nasal in character. The tongue would not protrude, and he could not hold up his head. The reflexes in his extremities were normal, and no weakness of the arms or legs was noted. The tremor of his hand was violent, and the neck and back were rigid.

The cerebrospinal fluid contained 149 cells per cubic millimeter, 85 polymorphonuclear and 64 mononuclear. The protein level was 84 mg. per hundred cubic centimeters.

The temperature on admission was 103.2 F. Shortly after admission a large amount of blood-stained mucus was aspirated from the pharynx. However, the color of the patient was good at the time. Restlessness and disorientation developed rapidly. About eight hours after admission the boy was cyanotic and frothy mucus was coming from his nose and mouth. He died suddenly.

At autopsy the lungs were heavy and edematous, the right weighing 350 Gm., the left 250 Gm. There was frothy, orange to pink fluid in the trachea and bronchi. The cut surface dripped edematous fluid. The microscopic examination confirmed the gross observation of massive pulmonary edema.

5. Miller, R.: A Case of Relapsing Acute Poliomyelitis Showing Nystagmus with Pathologic Examination, Brain **30**: 117, 1907.
6. Brahdy, M. B., and Lenarsky, M.: Difficulty in Swallowing in Acute Epidemic Poliomyelitis, J. A. M. A. **105**: 229 (July 28) 1934.

CASE 2.—N. M., a farmer aged 33, first noticed excessive salivation and a mild sore throat about one week prior to his admission to the hospital. During this period, in spite of his malaise, he continued to work and to do the chores around his farm. Two days before admission there developed a severe headache, a backache and a stiff neck. He came to the hospital because of an abrupt appearance of dysphagia and a nasal quality to his speech.

When seen his temperature was 102 F., the pulse rate, 110 and the respiratory rate 24. He was acutely ill. There was an involvement of the fifth and seventh cranial nerves on the right side and a paresis of the ninth and tenth nerves bilaterally. Muscle function was otherwise intact. A spinal puncture revealed 81 cells per cubic millimeter, with 24 polymorphonuclears.

Shortly after his admission hoarseness developed, with increasing difficulty in phonation and swallowing. Saliva was accumulating in the hypopharynx. A tracheotomy was performed to provide an adequate airway, and oxygen was administered through the tracheotomy tube. His temperature dropped slowly. During the next few days, the patient was a little restless and was confused at times. A great deal of mucus was removed by suction through the tracheotomy tube. His cranial neural involvement appeared to remain stationary. By the seventh hospital day he began to swallow a little. The next day he was able to take sips of water. His voice remained hoarse and squeaky. Improvement continued, and on the twenty-third hospital day the administration of oxygen was discontinued. On the twenty-fifth day the tracheotomy tube was removed. The patient was discharged on the thirty-first hospital day, at which time he had completely recovered.

Paralysis of the nuclei of the lower cranial nerves can produce death by occlusion of the airway. The prognosis is good if an adequate airway is maintained and if the pathologic process remains limited to the cranial neural nuclei without involvement of the central autonomic system. Symptoms of such involvement are of serious prognostic import.

2. BULBAR-CENTRAL AUTONOMIC GROUP

It has been frequently observed in the past that patients may have extremely serious forms of bulbar poliomyelitis with only minimal evidence of involvement of the nuclei of the cranial nerves. Several authors [7] have suggested that death in these cases must be due to involvement of vital centers. McMillan [8] has noted a lack of relationship between the temperature and the pulse rate. In some of his patients the temperature rose rapidly as high as 110 F. before death. In others the temperature remained around 102 F. or less, while the pulse rate reached 150 and the respiratory rate was 50 per minute before death. A reference has been noted to an article in a foreign journal [9] on the function of the autonomic nervous system during the acute stage of poliomyelitis. Because of wartime delay of shipping this article is at present unavailable to us. As far as we have been able to determine, the recent communication by Brown and Baker [2] is the first correlation of clinical evidence of disturbed central autonomic function in poliomyelitis with the pathologic lesions and the recent advances in neuroanatomy and neurophysiology. Lesions in the reticular formation have been mentioned previously [10] but without clinical correlation. In the Minnesota poliomyelitis epidemic of 1946 a number of patients were seen with evidence of only mild paralyses of the cranial nerves but with severe disturbances of autonomic functions. These cases were studied clinically and pathologically. The observations have been reported in a recent communication.[2] The cases reported in the following groups are further examples of this correlation.

(*a*) *Bulbar-Respiratory Center Group.*—In our experience, symptoms of involvement of the respiratory center in the medulla have come on a number of days after the onset of pareses of the cranial nerves. The patients in this group have shown some palsies of the cranial nerves and also some evidence of circulatory and encephalitic involvement. However, the outstanding symptoms have been respiratory. During the course of the illness there develop irregularities of rhythm and depth of respiration. Respirations tend to be shallow, and there are prolonged intervals between inspirations. Following this, prolonged periods of apnea occur, and finally respirations cease. These respiratory symptoms have occurred despite strong intercostal muscles and a strong diaphragm. During and previous to the development of respiratory symptoms these patients are extremely anxious and apprehensive. They require frequent reassurance to calm them. There are periods of confusion. These symptoms frequently are caused by a hypoxia and may be present before the appearance of cyanosis. The use of the oximeter may aid in the detection of these early hypoxic states. Ultimately the temperature and pulse rate trend upward. The blood pressure may be elevated or may fall to shock levels terminally. In fatal cases there develops increasing cyanosis which defies attempts at adequate oxygenation. At necropsy there is pronounced hemorrhagic pulmonary edema.

Microscopic examination of the medulla oblongata at the level of the inferior olivary body has shown extensive inflammatory necrosis bilaterally in the ventral reticular substance. Pitts,[11] with Magoun and Ranson,[12] on the basis of stimulation experiments in cats, located the inspiratory and expiratory centers for respiration at the level of the inferior olivary body. The inspiratory center was found to be dominant and was located ventrally in the reticular substance. The expiratory center overlaps the inspiratory center and extends more dorsally and cephalad. The location of the respiratory center in cats corresponds almost exactly with the areas of inflammatory necrosis seen in patients who have died of central respiratory failure. Some patients with less severe symptoms involving the respiratory center recovered but required temporary use of the respirator in some instances. In general, involvement of the respiratory center is of serious prognostic import.

CASE 3.—D. T., a boy aged 13, was admitted to the pediatric service of University Hospitals on Aug. 17, 1946. He had become ill three days previously with sore throat, headache and an elevation of temperature to 101 F. He was listless and tired until the day of admission, when he suddenly began to vomit and his temperature rose to 103 F. At this time a nasal tone of voice was noticed, and he had difficulty in drinking water.

On admission he appeared acutely ill and decidedly lethargic. His blood pressure was 118 systolic and 80 diastolic. Slight

7. A Case of Palatal Paralysis, Cabot Case 18021, New England J. Med. **206**: 88, 1932. Neal, J. B.: Recent Advances in the Diagnosis and Treatment of Acute Poliomyelitis, M. Clin. North America **25**: 477, 1941.
8. McMillan, M. B.: The Temperature and Pulse in Poliomyelitis, M. Rec. **95**: 264, 1917.
9. Lundbäk, K.: Experimental Investigations on Functions of Autonomic Nervous System During Acute Phase of Poliomyelitis, Acta med. Scandinav. **114**: 365, 1943.
10. Sabin, A. B.: Pathology and Pathogenesis of Human Poliomyelitis, J. A. M. A. **120**: 506 (Oct. 17) 1942.
11. Pitts, R. F.: The Respiratory Center and Its Descending Pathways, J. Comp. Neurol. **72**: 605, 1940.
12. Pitts, R. F.; Magoun, H. W., and Ranson, S. W.: Localization of the Medullary Respiratory Centers in the Cat, Am. J. Physiol. **124**: 673, 1939; Origin of Respiratory Rhythmicity, ibid. **124**: 654, 1939.

weakness of the left facial muscles and paralysis of the right side of the palate with deviation of the uvula was evident. He had difficulty in swallowing and speaking, and large amounts of mucus were present in the posterior pharynx. Examination of the spinal fluid performed at another hospital was reported to have shown 27 mononuclear cells per cubic millimeter.

The facial weakness and difficulty in swallowing progressed during the first few hours in the hospital. The boy became nearly aphonic. Six hours after admission a tracheotomy was performed. He continued to be toxic and lethargic. His temperature rose to 106 F. on occasion during the next few days. The blood pressure fluctuated, rising to 150 systolic and 100 diastolic at times. On the fifth hospital day the patient became cyanotic with respiratory distress; oxygen was administered directly into the tracheotomy tube. His respiratory rate was irregular, and he had periods of apnea which lasted for one to three minutes. On the sixth hospital day he ceased breathing. A 25 per cent solution of nikethamide and artificial respirations were used, and irregular respirations were again established. The respirator was used only for the apneic periods, as the patient worked against it when breathing. On the seventh day, he became comatose, the temperature rose to 104 F. and the blood pressure fell to 80 systolic and 50 diastolic. The respirator was used continuously at first, but by the tenth day he could be out at intervals and gradually improved. By the thirteenth day he could take sips of water. The tracheotomy tube was removed on the thirty-fourth day without incident.

On December 13 he still showed left facial paresis and mild palatal involvement, but there were no other residual symptoms of consequence.

(*b*) *Bulbar-Circulatory Center Group.*—Symptoms of involvement of the circulatory center may be seen developing concomitantly with symptoms of palsies of the cranial nerves. In a few instances the circulatory symptoms are the predominant part of the clinical picture and those involving the cranial nerves are minimal.

The clinical symptomatology which results from involvement of the central control of circulation often is quite characteristic. The patient's lips are a deep cherry red, and the skin has a flushed, florid appearance. The pulse rate is extremely rapid, ranging between 150 and 200. It is often irregular and at times difficult to palpate. The blood pressure is low and later becomes unobtainable. The pulse pressure is small even with relatively normal systolic levels. The difference between systolic and diastolic pressure is often as little as 10 mm. of mercury. Terminally the skin is cold and clammy and has a mottled cyanosis. Hyperthermia is noted at that time, and the respirations tend to be shallow. These patients are apprehensive, anxious, restless and confused. The heartbeat is inaudible before respirations cease. Circulatory symptoms of milder intensity are observed in patients classified in the other groups of bulbar poliomyelitis. As long as symptoms referable to the circulatory center are present the prognosis remains guarded.

At necropsy the lungs are the site of severe hemorrhagic pulmonary edema. Sections through the medulla at the level of the inferior olivary body reveal intense inflammatory necrosis bilaterally within the dorsal reticular substance just below the floor of the fourth ventricle.[13] The dorsal motor nucleus of the vagus nerve and the nucleus ambiguus show almost no involvement.

Wang and Ranson [13] conducted experiments in cats using the Horsley-Clarke stereotactic instrument to study the effect of stimulation of the brain stem on blood pressure. They obtained decided pressor responses from the dorsal reticular substance of the medulla just beneath the floor of the fourth ventricle at the level of the inferior olivary body. Depressor responses were more diffuse and were located in the dorsolateral and, to a less degree, the ventromedial reticular substance of the medulla oblongata at the level of the inferior olivary body. They also observed mild pressor responses in the tegmentum of the pons. From this work it seems warranted to consider the dorsal reticular substance of the medulla oblongata at the level of the inferior olivary body an important area in the control of vasomotor responses. This area was the site of intense inflammatory necrosis in patients with bulbar poliomyelitis who died of circulatory collapse. Intact vagal nuclei would seem to rule out the vagus nerve as an essential part of the clinical picture.

Case 4.—Y. L., a white girl aged 16, first became ill Oct. 7, 1946, at which time there developed headache, stiffness of the back and neck and some nausea and vomiting. The following day she noticed difficulty in swallowing and was sent to the hospital by her physician.

On admission the patient revealed only a mild degree of dysphagia, a slightly stiff neck and some weakness of the left deltoid muscle. Her temperature was 104.6 F., and her pulse rate was 24. She was coughing up large amounts of mucus. Because of the bulbar symptoms a tracheotomy was performed shortly after admission. During the next twenty-four hour period, the patient became somewhat more restless. An oxygen-helium mixture was administered through the tracheotomy tube. Her pulse rate gradually rose to 150, and her respirations became slightly shallow. Her blood pressure varied between 108 systolic over 88 diastolic and 30 systolic over a questionable diastolic reading. Toward the end of the second hospital day the patient had become very restless. Her pulse was feeble, rapid and irregular, and her blood pressure was difficult to obtain. In spite of all supportive measures, the respirations became shallow and the patient expired after a twenty-six hour hospital stay.

3. BULBAR-ENCEPHALITIC GROUP

Encephalitic symptoms are not infrequently seen in patients with bulbar poliomyelitis. Lemmon [14] reported cerebral symptoms in 17 of 49 cases he studied. Because of the frequency with which these symptoms are observed in bulbar poliomyelitis, their appearance should lead one to consider a tentative or expectant diagnosis of bulbar poliomyelitis even in the absence of objective evidence of palsies of the cranial nerves. This presumption was usually verified in our cases by the subsequent course of the disease. This was true of the symptoms we have classified in the diffuse encephalitic group but was not as true of those in the focal encephalitic group.

(a) Diffuse Encephalitic Group.—The following symptomatology is observed frequently among patients with bulbar poliomyelitis and in our experience is universally present among the more severely ill patients. The presence of these symptoms should alert one to the possibility of a bulbar involvement even in the absence of objective signs of cranial neural pareses. These patients show great anxiety and apprehension. They are keenly aware that something serious is wrong with them and frequently feel (often correctly so) that they are going to die. They require

13. Wang, S. C., and Ranson, S. W.: Autonomic Responses to Electrical Stimulation of the Lower Brain Stem, J. Comp. Neurol. 71: 437, 1939.

14. Lemmon, G. B., Jr.: An Analysis of Forty-Nine Cases of Acute Anterior Poliomyelitis, Pennsylvania M. J. 45: 1039, 1942.

repeated reassurance that things are progressing satisfactorily. Ideas come to them with unusual rapidity, and minimal stimuli produce rapid responses. Some patients comment on the fact that ideas race through their minds. In the motor sphere these patients show quivering, trembling, twitching and jerking of the facial muscles and to a lesser degree of the extremities. The face is flushed and there is a tremor of the hands. All movements are extremely rapid as a part of the general hyperactivity. These patients have a pronounced urgency about getting rid of pharyngeal collection of fluids, about having the pillows rearranged or about having the tracheotomy tube readjusted. Their urgency is indicated by snapping of fingers, quick movements of the head or extremities or sudden sitting up in bed. Many of these patients are unable to sleep and remain awake several days and nights before their hyperactivity subsides. In the fatal cases confusion becomes prominent and is often followed by lethargy, coma and death. At first we considered some of these bulbar patients to be neurotic, but further experience taught us to respect their premonition that things were not going well.

Prolonged somnolence has been reported by Tilney.[15] This occurred once among the adult patients observed at the University Hospitals, but was more commonly observed in the children.

In many patients, especially those in respirators, a typical toxic confusional state appears about one week after the onset of the illness and lasts about a week. These persons develop fixed ideas and stubbornness which gradually merge into paranoid projections about members of the nursing or medical staff. These ideas are occasionally replaced by obvious misinterpretations, hallucinations and irrationality. Contact with reality can be restored in some persons by lighting the room more brightly, by permitting a view of the street outside the window or by a visit from a close member of the family.

Although many patients with bulbar poliomyelitis showed the clinical symptomatology indicative of cerebral involvement, only a small number actually had inflammatory changes within the cerebral hemispheres. However, it was noticed that the cerebral symptoms would frequently disappear after measures were taken to insure adequate oxygenation of the patient. This was accomplished by tracheotomy, suction or oxygen under positive pressure by mask or tracheotomy. This led to the conclusion that many of the cerebral symptoms seen in bulbar poliomyelitis were secondary to cerebral anoxia rather than to direct involvement of the brain by the virus. In poliomyelitis the common factors that may result in deficient oxygenation of the blood are as follows: obstruction of the air passages by secretions or by paresis of the vocal cords; failure of the peripheral or central respiratory mechanism; failure of circulation; pulmonary complications, especially atelectasis or hemorrhagic pulmonary edema, and failure of the mechanical devices used in treatment. The appearance of the encephalitic symptoms, therefore, serves as a warning to reexamine these patients for the various causes of anoxia. Persistence of the symptoms despite attempts to improve the oxygenation is of serious prognostic import. The following case is an example of the encephalitic group of bulbar poliomyelitis.

CASE 5.—K. M., a man aged 36, first had abdominal pain on Aug. 30, 1946. The following day he noticed malaise, sore throat and anorexia. On Sept. 1, 1946 there developed severe headache, vomiting and some stiffness of the neck and back. The local physician performed a spinal puncture and found 660 cells per cubic millimeter.

On admission his temperature was 102.8 F., his pulse rate 96 and his respiratory rate 18. There was no bulbar or spinal involvement. However, the patient appeared mildly confused. On the second hospital day the patient appeared to have some difficulty in breathing and was placed in a respirator. He became decidedly apprehensive and restless. In spite of apparently adequate oxygenation he soon became completely disoriented. He slept only at short intervals and when awake was often uncooperative. He refused to take food and fluids and at times talked incoherently for long periods. He complained of diplopia. He appeared to be getting along fairly well when he suddenly became cyanotic and expired.

(b) Focal Encephalitic Group.—Clinical evidence of focal cerebral lesions has been reported on numerous occasions in the literature on poliomyelitis. In addition focal lesions which were clinically silent have been demonstrated pathologically. It seems probable that the focal signs are due to actual inflammatory involvement of the implicated structure. We observed a discrete inflammatory destruction of a considerable portion of the dentate nucleus in 1 patient.

Aphasic disorders have been reported rather infrequently. Nielsen and Von Hagen [16] reported 1 case of visual verbal agnosia due to poliomyelitis. Cerebral motor phenomena have been reported with greater frequency. These include myoclonic jerks as well as grand mal convulsions. In some instances the convulsions have been reported as persisting long after recovery from the acute phase of the disease. Spastic hemiparesis [17] has been reported not uncommonly in the literature. Hydrocephalus has been attributed to acute poliomyelitis.

Among the patients observed at the University Hospitals during the 1946 epidemic there were a few examples of focal encephalitic lesions. In 1 patient there developed ataxia of voluntary movements of the left arm and leg. Several had severe recurring convulsions. Focal complications did not appear frequently enough to warrant any opinion as to their prognostic import. One patient with repeated convulsions died of central respiratory failure.

4. COMBINED BULBAR-CERVICOTHORACIC CORD GROUP

The patients in this combined bulbar-cervicothoracic cord group in addition to their bulbar symptoms required treatment in a respirator because of severe damage to the cervical and thoracic cord, which produced failure of the diaphragm and intercostal muscles. In this combined clinical group there were a considerable number of patients. The prognostic importance of a combined lesion, particularly in adults, is emphasized by the fact that only 5 of these patients survived. In children this combined lesion was not

15. Tilney, F.: Poliomyelitis with Prolonged Somnolence, Neurol. Bull. New York 1:7, 1918.

16. Nielsen, J. M., and Von Hagen, K. O.: Three Cases of Mind Blindness (Visual Agnosia): One Due to Softening in Occipital Lobes (Autopsy), One Due to Anterior Poliomyelitis (Non-Fatal), One Due to Drugs (Translose), J. Nerv. & Ment. Dis. 94:186, 1936.

17. Poynton, F. J.: Case of Poliomyelitis Affecting the Midbrain, Showing Involvement of the Pyramidal and Extrapyramidal Systems, Proc. Roy. Soc. Med. 13:53, 1919-1920.

nearly so critical. The most frequent findings at necropsy in this group, aside from lesions of the nervous system, were hemorrhagic pulmonary edema, atelectasis, bronchopneumonia, pulmonary abscess and, in 1, a massive pulmonary embolism.

CASE 6.—W. H., a boy aged 14, was admitted to the pediatric service of the University Hospital on Aug. 9, 1946. He was acutely ill and complained of pain in the neck, extreme weakness, inability to swallow and a nasal voice. There was mucus in his throat in large amounts. His temperature was 103 F.

Examination revealed paresis of the soft palate and a right lower facial weakness. His neck and back were rigid, and the Kernig's sign was bilaterally positive. The knee jerks were absent, but ankle reflexes were normal. His blood pressure initially was 115 systolic and 60 diastolic; it continued to rise until August 12, when it was 180 systolic and 106 diastolic. On this day the patient appeared much worse. The temperature, which had fallen to normal, rose again to 102.6 F. There was evidence of diaphragmatic paralysis, and the boy appeared disoriented. The facial musculature was weak on the right side, with partial involvement on the left. The sternocleidomastoid muscles were decidedly involved bilaterally. This boy was intelligent and cooperative and was able by postural drainage and suction to handle the fluids in his throat. Although use of the respirator was seriously considered on several occasions, it never became necessary. The blood pressure gradually fell. By the seventh hospital day it was 150 systolic and 90 diastolic, and by the eleventh day it had returned to 110 systolic and 80 diastolic. He recovered comparatively rapidly. On his fifteenth hospital day he took 2,160 cc. of fluids orally without choking.

SUMMARY

1. Bulbar poliomyelitis is not a single clinical entity but can be divided into a number of clinical groups, depending on the region of the medulla which is involved by the pathologic process.

2. The most frequently recognized form of bulbar poliomyelitis consists of involvement of the nuclei of the cranial nerves. Only destruction of the tenth cranial nerve furnishes an immediate threat to the life of the patient by producing an obstruction to the airway and subsequent asphyxia.

3. When the autonomic centers within the medulla are injured in poliomyelitis, symptoms of respiratory or circulatory failure result, even in the absence of severe cranial neural, intercostal or diaphragmatic paralysis.

4. Clinical symptomatology indicative of cerebral involvement is common in bulbar poliomyelitis. These symptoms usually are caused by anoxia and clear up after adequate oxygen therapy.

The Chemical Mediation of Nerve Impulses.—The studies of Loewi, Dale, Cannon and others have firmly established the validity of the concept of the chemical mediation of nerve impulses. It is now generally accepted that the effects of the somatic and parasympathetic nervous systems are produced by the liberation at the nerve endings of acetylcholine. This substance is quickly destroyed by cholinesterase, an enzyme present in the blood and tissue fluids. The effects of postganglionic sympathetic nerve impulses are the result of the liberation at the nerve terminals of epinephrine. The clinical implications of these findings are emphasized by the fact that in at least one disease, namely myasthenia gravis, the primary dysfunction may be attributed to interference with the mechanism of acetylcholine activity.—Bloomfield, Sylvan: Relative Deficiency of Parasympathomimetic Activity in Aqueous of Eyes with Chronic Simple Glaucoma, *Arch. Ophth.*, May 1947.

PENICILLIN INHALATION THERAPY IN RESPIRATORY INFECTIONS

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Therapeutic aerosols with oxygen flows may be administered for topical therapy of the respiratory tract or for rapid systemic effect through absorption from the tremendous inner surface area of the lung. It has been demonstrated in animals [1] and in man [2] that inhalational material may be uniformly distributed and penetrates the outermost air sacs of the lungs. It is thus possible to obtain high local concentrations with varying blood levels via the "pulmonary route."

Continuous aerosolization with oxygen of bronchodilator, vasoconstrictor and chemotherapeutic agents has been employed in patients with asthma, pulmonary emphysema, pneumonia, gas poisoning and other types of bronchopulmonary diseases.[3] The specific advantages of penicillin over the sulfonamide compounds suggested its superiority as an aerosol [4] in the treatment of serious disease of the respiratory tract.

The physiologic rationale of penicillin aerosol therapy has been well established. Bryson and his colleagues [4d] demonstrated that penicillin aerosol penetrated the lungs, diffused into the blood stream and was excreted into the urine. Barach and his associates [5] confirmed

Dr. Claire M. Ryder, Dr. William H. Ainslie and Dr. William G. Duprey cooperated in this work.

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This paper has been abbreviated on account of lack of space. The complete paper, including summary and case histories, can be found in the authors' reprints.

1. Krueger, A. P., and others: The Prophylaxis and Treatment of Experimental Influenza by Inhalation of Immune Serum, Federation Proc. **3**: 101, 1943; The Inhalatory Route for Prophylaxis and Treatment of Experimental Influenza: I. The Distribution of Inhaled Material; II. Immune Serum in Prophylaxis and Treatment, Am. J. M. Sc. **207**: 40-60, 1944

2. Mutch, N., and Hoskins, H. L.: Inhalation of Chemotherapeutic Substances, Lancet **2**: 775-780, 1944.

3. (*a*) Richards, D. W., Jr.; Barach, A. L., and Cromwell, H. A.: Use of Vaporized Bronchodilator Solution in Asthma and Emphysema: Continuous Inhalation Method for Severe Asthmatic States, Am. J. M. Sc. **199**: 225-232, 1940. (*b*) Barach, A. L.: Principles and Practice of Inhalation Therapy, Philadelphia, J. B. Lippincott Company, 1944. (*c*) Segal, M. S.: Inhalation Therapy in Treatment of Serious Respiratory Disease, New England J. Med. **229**: 235-241, 1943. (*d*) Segal, M. S.: Inhalation Therapy in Treatment of Serious Respiratory Disease, ibid. **229**: 235-241, 1943; Inhalation Therapy, ibid. **230**: 456-465 and 485-493, 1944. (*e*) Segal, M. S., and Abner, M.: Management of Certain Aspects of Gas Poisoning with Particular Reference to Shock and Pulmonary Complications, Ann. Int. Med. **20**: 219-227, 1944.

4. (*a*) Segal, M. S., and Ryder, C.: Penicillin Aerosol in the Management of Lobar Pneumonia, Bronchiectasis, Lung Abscess and Infective Bronchial Asthma, Bull. New England M. Center **7**: 279-286, 1945; (*b*) Penicillin Aerosolization in the Treatment of Serious Respiratory Infections: Preliminary Report, New England J. Med. **233**: 747-756, 1945. (*c*) Segal, M. S.: Progress in Inhalation Therapy, Mod. Med. **14**: 63-79, 1946. (*d*) Bryson, V.; Sansome, E., and Lashin, S.: Aerosolization of Penicillin Solution, Science **100**: 33-35, 1944. (*e*) Barach, A. L.; Oppenheimer, E. T., and Forman, J.: Inhalation of Penicillin in Bronchopulmonary Infection, News Letter, A. A. F. Rheumatic Fever Control Program, 1945, vol. 2, pp. 10-21.

5. (*a*) Barach, Oppenheimer and Forman,[4e] (*b*) Barach, A. L.; Silberstein, P. H.; Oppenheimer, E. T.; Hunter, T., and Soroka, M.: Inhalation of Penicillin Aerosol in Patients with Bronchial Asthma, Chronic Bronchitis, Bronchiectases and Lung Abscess: Preliminary Report, Ann. Int. Med. **23**: 485-509, 1945. (*c*) Eckman, M.; Rumsey, C. C., Jr.; Barach, B., and Barach, A. L.: Demand Apparatus for Automatic Delivery of Aerosols During Inspiration, J. Lab. & Clin. Med. **30**: 608-610, 1945. (*d*) Barach, A. L.; Garthwaite, B.; Soroka, M., and Anderson, F. F.: An Apparatus for the Introduction of Penicillin Aerosol into the Nasal Accessory Sinuses with a Case Report of a Patient with Chronic Sinusitis, Ann. Int. Med. **24**: 97-103, 1946.

these observations in a group of patients with bronchopulmonary disease and developed the proper equipment and technic for penicillin aerosol therapy. In their detailed investigation of the fate of aerosols in the lungs Mutch and his colleagues [6] demonstrated the efficacy of aerosol therapy. They suggested the use of penicillin aerosol for the management of purulent bronchitis and bronchiectasis and as a prophylactic against the secondary pyococcic infection in influenza. Knott and Clark [7] carried these studies further. They demonstrated effective bacteriostasis in closed chambers and suggested a technic for the control of air-borne infections. Other investigators [8] have employed penicillin with encouraging results in the management of pulmonary infections. In most cases effective therapeutic levels in the blood and good topical effects have been obtained.

The present report concerns itself with a summary of our findings in the use of penicillin aerosol in the treatment of 118 patients with bacterial pneumonia, infective bronchial asthma, bronchiectasis, purulent sinusitis, pulmonary abscess, infective laryngotracheobronchial edema and chronic pulmonary emphysema.

TREATMENT AND TECHNIC

The maintenance of a constant high level of penicillin in the blood is not essential in purely local pulmonary infections without bacteremia. Topical penicillin levels can best be attained by administering concentrated doses six times daily. In patients with toxemia or septicemia additional doses, administered intramuscularly five or six times daily, may help in producing blood levels sufficiently high to clear the blood stream of bacteria. Infections of the lung, occurring as they usually do in well vascularized soft tissues, generally respond to concentrations of penicillin which are completely ineffective in the relatively avascular hard tissues.

The patients with pneumococcic pneumonia were treated for three to seven days; those with bronchiectasis or pulmonary abscess for seven days prior to surgical treatment or for six weeks for purely medical therapy; those with infective bronchial asthma, from three days through three weeks; those with streptococcic or staphylococcic pneumonia complicated with formation of abscess, generally for a minimum of three or four weeks. The other patients were treated until there was no further evidence of infection and the penicillin-susceptible organisms were eradicated.

The sodium or calcium salt of penicillin was used. Generally 25,000 units of penicillin were dissolved in 1.0 cc. of isotonic solution of sodium chloride and given at three hour intervals for six to eight doses daily. The patients with pneumococcic pneumonia generally received 25,000 units at two hour intervals for six doses and then at three hour intervals thereafter. The patients with the more serious types of pneumonia and pulmonary abscesses received 50,000 units in 2.0 cc. of isotonic solution of sodium chloride. Those with acute or chronic sinusitis were treated with the 25,000 unit dosage. We found these patients able to take with complete tolerance 50,000 or even 100,000 units in 2.0 cc. of isotonic solution of sodium chloride via the nasal route.

In our earlier series [9] of cases we observed no systemic, toxic or allergic manifestations. However, more recently [10] we have observed local and generalized manifestations which consisted of edema of the lips or mucosa of the mouth and, in several instances, the development of a generalized urticaria. The local reactions generally cleared up after changing to another type of penicillin. The urticaria of 1 patient cleared up promptly when treatment ceased and did not return later when a different lot of penicillin was used. In a recent case with complicating urticaria we were able to continue with the same lot of penicillin by adding diphenhydramine hydrochloride ("benadryl hydrochloride" N. N. R.) orally. This new synthetic antihistamine agent apparently was of value.

The apparatus generally used in our studies was the basic "vaponefrin nebulizer" enlarged to a 2 liter size to permit the utilization of the expired penicillin. This nebulizer produced a fine voluminous mist or smoke screen with a particulate size of most of the molecules of less than 1 micron. A piece of rubber tubing connected the nebulizer with a regulator attached to an oxygen tank. Oxygen flows of 5 to 7 liters were generally sufficient to aerosolize 1.0 cc. of the penicillin solution in approximately fifteen minutes. To avoid loss of the drug in expiration, a glass Y tube, or simple opening, was placed just proximal to the inlet of the nebulizer. The patient or nurse was instructed to close the open end with one finger on inspiration and to remove the finger on expiration. With this technic the oxygen by-passed the nebulizer in the expiratory phase of respiration and no penicillin was lost through the carburetor opening of the nebulizer. Occasionally an Emerson demand valve system was attached. This had the advantage of automaticity and did not require the patient's cooperation with the Y tube. This was of particular value in the seriously ill patients.

For those patients unable to use the above technic the O. E. M. mask can be incorporated. The oxygen entrance tube may then be closed off. Infants and small children can best be treated in enclosed plastocele hoods or in specifically constructed closed chambers utilizing the basic nebulizer and oxygen flows as described.

The basic "vaponefrin nebulizer" can also be attached to the tracheotomy tube whenever topical penicillin aerosol therapy is desired in tracheotomy cases. We found this of particular value in 2 patients with acute laryngotracheobronchial edema characterized by pronounced cyanosis and inspiratory retraction. These patients were moribund at the outset of therapy. For these patients instead of using oxygen we have introduced a mixture of 75 per cent helium and 25 per cent oxygen directly through the nebulizer. One cubic centimeter of "vaponefrin inhalant" (a solution of synthetic racemic epinephrine hydrochloride) was aerosolized just preceding the penicillin aerosol for the relief of bronchospasm. This technic may prove to be of life-saving value in patients with laryngotracheobronchial obstructive disease.

6. Mutch and Hoskins,[3] Mutch, N., and Rewell, R. E.: Penicillin by Inhalation, Lancet 1: 650-652, 1945.

7. Knott, F. A., and Clark, W. H.: Absorption of Aerosol Penicillin via the Lungs, Lancet 1: 468-469, 1945.

8. Olsen, A. M.: (a) Nebulized Penicillin: Preliminary Report of Its Role in the Management of Surgical Bronchiectasis, Proc. Staff Meet., Mayo Clin. 20: 184-194, 1945; (b) Streptomycin in the Treatment of Chronic Bronchiectasis: Preliminary Report, ibid. 21: 53-54, 1946. (c) Hagens, E. W.; Karp, M., and Farmer, C. J.: Inhalation Method for Penicillin Therapy: Preliminary Report, Arch. Otolaryng. 42: 333-336 (May) 1945. (d) Vermilye, H. N.: Aerosol Penicillin in General Practice, J. A. M. A. 129: 250-257 (Sept. 22) 1945. (e) Hanks, R. J.: Nebulized Penicillin in Treatment of Respiratory Infections, Texas State J. Med. 42: 253-254, 1945. (f) Engelsher, D. L.: Aerosol Penicillin, Correspondence, J. A. M. A. 126: 61 (May 4) 1946. (g) Finke, W.: The Use of Penicillin Aerosol in Respiratory Infections, Bull. M. Soc. County of Monroe, New York 3: 386-393, 1946.

9. Segal and Ryder,[4,5] Segal.[10]

10. Segal, M. S., and Ryder, C. M.: Progress in Penicillin Inhalation Therapy, address before the Massachusetts Medical Society, May 21, 1946; New England J. Med. 236: 132-138, 1947.

LEVELS OF PENICILLIN IN THE BLOOD

Absorption of penicillin from the pulmonary tree into the blood stream was demonstrated by the effective levels of penicillin in the blood, which ranged from 0.015 to 0.225 unit per cubic centimeter in one hundred

Fig. 1.—Penicillin aerosol apparatus suspended from a clysis stand. The "vaponefrin" nebulizer (Vaponefrin Company) with a 2 liter rebreathing glass bulb, Y tube for controlling the flow of oxygen only and rubber tube connection to the oxygen regulator.

Fig. 2.—Penicillin aerosol rebreathing apparatus with humidifier and Emerson demand valve (J. H. Emerson Company) to supply aerosol on inspiration only. The apparatus is most suitable for the sickest patients.

and eighteen determinations. Generally higher levels were obtained in those with extensive pulmonary involvement of a pyogenic type, that is, those with pneumonia or pulmonary abscess. Peak levels were observed at the end of one half hour, and in some cases they persisted for as long as two hours. Higher levels in the blood were obtained with the higher doses. The absorption of penicillin into the blood stream is not necessarily a measure of the topical effectiveness of penicillin aerosol. The levels will vary according to the individual breathing pattern, equipment, dosage and type of penicillin, absorption variations of accumulated pus and secretions and, finally, the technic for the determination of the penicillin levels. In most of the cases the determination of levels in the blood is more of academic interest than of practical value. The clinical course is sufficient proof of the topical effectiveness of penicillin aerosol and is best demonstrated in the patients with pneumonia and pulmonary abscess.

We [19] compared the levels of penicillin in the blood in a series of normal subjects [21] receiving 50,000 units

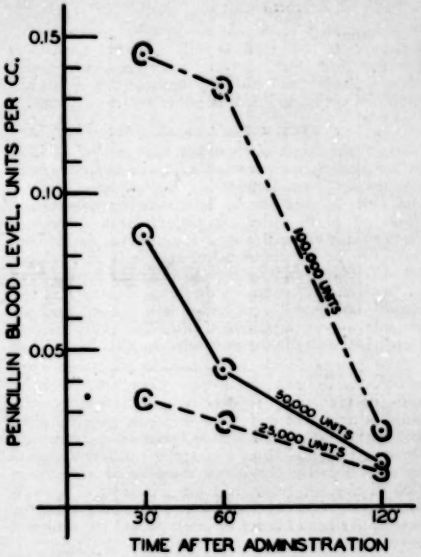

Fig. 3.—Levels of penicillin in the blood after administration of penicillin aerosol; thirty-seven trials.

of penicillin-saline aerosol and, at a later time, 50,000 units of penicillin and 1 per cent "neo-synephrine" aerosol. The average curve obtained with the penicillin and "neo-synephrine" aerosol appeared slightly lower than the one obtained with penicillin-saline aerosol, particularly at one half and at one hour. This may be interpreted as indicating that "neo-synephrine" delays the absorption of penicillin through the pulmonary tree. We are carrying these studies further. A therapeutic agent which could achieve greater topical efficacy and less systemic effect would prove of considerable value in combating chronic pulmonary disease.

PNEUMONIA

Observations in this group definitely proved the topical bacterial effectiveness of penicillin aerosol on the organisms in the bronchial mucosa and alveoli and can

21. This work was aided by a grant from Frederick Stearns & Company.

serve as the pharmacologic rationale for its subsequent use in suppurative pulmonary disease. We believe that these are the first cases of bacterial pneumonia in which treatment was with penicillin aerosol.

Wilson and his colleagues [11] recently demonstrated the effectiveness of penicillin aerosol in experimental type I pneumococcic pneumonia in rats. Somewhat better results were obtained from inhalation than from intramuscular injections of the smaller dose of penicillin (250 units per dose), while with the larger dose (500 units per dose) there was no difference in the percentage of survivals.

We obtained clinical cures in 11 patients with pneumococcic pneumonia and in 1 patient with an acute pulmonary infarct and pneumonitis. The response was striking. Their clinical charts returned to normal promptly, they felt fine throughout treatment, and no complications were encountered. The sputum became negative on the second or third day and remained so at time of discharge six to ten days after hospitalization. The case histories of the first 6 patients appear on figure 4.

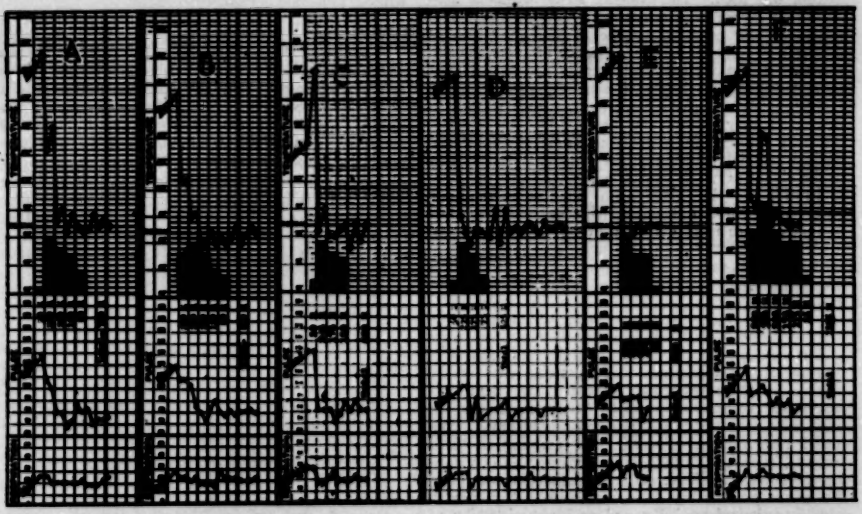

Fig. 4.—Patient A was a 34 year old woman with type 4 pneumococcic pneumonia of the lower lobe of the left lung. Patient B was a 26 year old woman with type 12 pneumonia of the lower lobe of the left lung. Patient C was a 16 year old girl suffering from type 33 pneumonia of the lower lobe of the left lung. Patient D was a 68 year old woman with pulmonary infarct and acute pneumonitis. Patient E was a 24 year old woman suffering from type 1 pneumococcic involvement of the lower lobe of the left lung. Patient F was a 39 year old man suffering from type 1 pneumococcic pneumonia in both the lower lobe of the left and the upper lobe of the right lung.

We do not advocate penicillin aerosol for the routine therapy of patients with pneumococcic pneumonia. The simpler procedures employing the sulfonamide compounds or penicillin are preferable. However, for the management of streptococcic and staphylococcic pneumonia and pneumonia due to penicillin-susceptible strains of Friedländer's bacillus, we are of the opinion that penicillin aerosol therapy is more effective than parenteral therapy alone. Combined aerosol and intramuscular therapy may be employed in patients who are seriously ill, particularly patients with septicemia.

Fullerton and Shane [12] recently reported their observations with penicillin aerosol in 14 patients with bronchopulmonary disease. They confirmed our previous observations [13] and reported dramatic improvement in 3 patients with pneumococcic pneumonia.

For patients with staphylococcic pneumonia the therapy should be continued for at least one week after all the clinical and roentgenographic signs of infection have subsided. As these lesions tend to become fibrosed and walled off, protracted therapy is advisable to insure complete eradication and to prevent exacerbations and formation of abscesses.

In order to control pneumonia due to penicillin-susceptible strains of Friedländer's bacillus we have employed massive doses of 100,000 units at three hour intervals in 2 such patients. In 1 of these patients a blood level of 0.250 unit of penicillin per cubic centimeter was obtained one half hour after the inhalation of 100,000 units. In both these patients the organisms rapidly disappeared and remained absent during the course of therapy. In 1 of these patients, however, the organisms recurred, although the patient remained symptom free for some time after discontinuance of therapy.

It appears from the literature that streptomycin may prove of value in infections of the lungs with Friedländer bacillus, Hemophilus influenzae and tubercle bacilli. The combined intramuscular and aerosol routes may prove most efficacious in such cases. Durant and

11. Wilson, C. E.; Hammond, C. W.; Bryne, A. F., and Bliss, E. A.: The Control of Experimental Pneumonia with Penicillin: I. Comparison of Inhalation and Injection Therapy, Bull. Johns Hopkins Hosp. 77: 411-421, 1945.

12. Fullerton, C. W., and Shane, S. J.: The Treatment of Acute and Chronic Pulmonary Disease with Penicillin Aerosol, Canad. M. A. J. 54: 535-539, 1946.

13. Footnotes 4b and 10.

the nitrogen[14] reported as be remarkable effectiveness of streptomycin therapy in 13 patients with type II A influenzae pulmonary infections. The simultaneous use of streptomycin here was effective in 2 cases with chronic suppurative disease. In a first case of extensive acute bilateral suppurative pneumonitis, the continued intramuscular and intrathecal routes were used (per electricity). A recent case report from the Mayo Clinic[15] described a rather remarkable case of bilateral laryngeal ulcerations with persistent and severe administration of streptomycin. In our experience we have treated 2 patients with proven infection by a gram-negative fusiformis organism a strain streptomycin-resistive strains rapidly appeared which could not be eradicated despite intensive doses. We have not observed the appearance of penicillin-resistive strains in our cases in which penicillin aerosol was used. The evidence so far available suggests that except for staphylococcic infections penicillin resistance will probably not be of any great clinical importance. The possible appearance of streptomycin-resistive strains with aerosol therapy should be taken into consideration before instituting such therapy. Unfortunately, streptomycin also has toxic potentialities which may possibly be attributed to the impurities now present in many commercial preparations. Serious and fatal intramuscular reactions and damage to the eighth nerve in human beings, and delayed fatty infiltration of the kidneys in animals, have been observed. These difficulties will no doubt become minimized with more careful control of the production of streptomycin.

The case histories[16] and clinical charts of the first 6 patients with pneumonia treated with penicillin aerosol appear on figure 4.

BRONCHIAL ASTHMA

A course of penicillin aerosol lasting from three days to three weeks was given to 22 patients with severe chronic infective bronchial asthma. The penicillin-susceptible organisms promptly disappeared and in most cases remained absent during hospitalization. We found such therapy generally disappointing in these patients, although striking improvement was occasionally observed. In these patients the proper control of the primary bronchial infection with intramuscular administration of penicillin and oral administration of sulfonamide drugs has proved equally disappointing. Engelbreth[17] recently commented briefly on his observations in 74 cases of bronchial asthma, stating that he found it of questionable value in a small percentage and of no value in the majority of cases of bacterial asthma. Most of our patients observed, however, that they were able to raise sputum more easily while getting the penicillin aerosol. Many objected to the taste and irritating qualities of the aerosol. The danger of local or generalized allergic reaction to penicillin aerosol in the asthmatic group must always be kept in mind. Most of the local and urticarial reactions which we have observed have been in patients with bronchial asthma or bronchiectasis. We have recently observed the onset of mild bronchial asthma in 2 patients receiving penicillin aerosol therapy for the management of chronic bronchitis and emphysema, and in 2 patients with bronchiectasis. The patients were free of asthma prior to these attacks. The attacks subsided promptly after administration of epinephrine were given after the penicillin aerosol had been discontinued.

One of our most striking witnesses was observed in a patient with chronic untreatable bronchial asthma who was treated in the Barach convalescing unit apparatus with mixtures of 5 per cent helium and 95 per cent oxygen under positive pressure. In addition to penicillin aerosol was introduced directly into the nebulizer apparatus. Marked clinical improvement occurred after several days of such therapy. However, it was rather difficult to evaluate the specificity of penicillin aerosol therapy in this particular case, as we have made similar observations in many patients who were being treated with helium and oxygen under positive pressure without penicillin aerosol.[18]

BRONCHIECTASIS

A series of 42 patients with chronic bronchiectasis were treated with penicillin aerosol. Eight of the patients had subsequent surgical treatment. Most of the patients received an initial course of therapy of at least six weeks and subsequently returned for an additional seven days of therapy at three to six month intervals. Postural drainage was carried out for each treatment. Several of these patients continued to take penicillin aerosol therapy once daily at home throughout this period of time. We have found this procedure most effective in preparing the patient for operation and in preventing postoperative infections. Improvement, lessening of toxicity, diminution in the amount of daily sputum, loss of its foul character, rapid disappearance of the penicillin-susceptible organisms, improvement in the patient's appetite and gain in weight were uniformly observed. Considerable improvement was observed in the bronchograms of several patients with involvement of a single lobe. This therapy was most helpful in the control and prevention of pneumonitis, which occurs in many patients with bronchiectasis. It was also of value in those patients who were considered to be unsuitable for lobectomy or pneumonectomy or who refused to undergo such procedures.

We are ever mindful that the anatomic changes accompanying bronchiectasis are generally permanent ones and cannot be changed by any type of therapy save resection. These patients are subject to repeated episodes of infection, pneumonitis or involvement of other lobes. The mucosal secretions in bronchiectasis largely result from the structural changes in the endothelial lining of the small bronchioles. Invasive organisms contribute by further destruction of the bronchioles. Infection can be eradicated or eliminated by penicillin aerosol. We are in full agreement with Olsen[19] that it thus becomes the ideal therapy for preoperative and postoperative cases.

Many of our patients had previously received courses of penicillin administered intramuscularly and sulfonamide drugs given orally without the striking effects obtained from penicillin aerosol therapy. The vital capacities of most of these patients increased from 30 to 40 per cent above the levels before aerosol therapy and have remained fairly constant at the improved figure. Penicillin aerosol therapy can easily be carried out in the patient's home under supervision.

14. Durant, T. M.; Schlehlek, A. J.; Norris, C. M., and Brown, C. L.: Streptomycin Therapy in Hemophilus Influenzae Pulmonary Infections, J. A. M. A. **131**: 194-196 (May 18) 1946.
15. Pijl, F. A.; Hinshaw, C. H., and Feldman, W. H.: Treatment of Tuberculosis of the Larynx with Streptomycin: Report of Case, Proc. Staff Meet., Mayo Clin. **21**: 127-130, 1946.
16. These histories were previously published in full.[20]

The penicillin-susceptible organisms uniformly disappeared from the sputum under such therapy. Frequently we observed the appearance of gram-negative organisms which were refractive to penicillin aerosol therapy. A recent report by Olsen [8b] demonstrated the value of streptomycin aerosol in 9 patients with whom penicillin aerosol therapy had failed. He employed doses of 500,000 units in 20 cc. of isotonic solution of sodium chloride per day by nebulization. The streptomycin-susceptible organisms were uniformly eradicated and a reduction in the volume of sputum followed immediately. Our experience with streptomycin aerosol has been limited to 2 patients with gram-negative Friedländer organisms. In our first trial with this drug the streptomycin-susceptible organisms rapidly disappeared when 100,000 units at three hour intervals were employed, but returned after several days of therapy. We then found it necessary to increase the dose. After a while the organisms became more resistive and could not be eradicated despite tremendous doses. The possible appearance of streptomycin-resistive strains with aerosol therapy should be taken into consideration before instituting such therapy. Also the practical usefulness of the drug may be limited by its possible toxicity, the appearance of resistive strains and its cost.

SINUSITIS [17]

In evaluating a preliminary report such as this clinical study of penicillin aerosol in the treatment of sinusitis one must be careful to diagnose whether the sinusitis be acute, subacute or chronic. Of the 18 cases thoroughly studied clinically and by roentgen rays there were 9 cases of chronic sinusitis complicated by bronchiectasis, 5 cases of chronic sinusitis uncomplicated by pulmonary disease and 4 cases of acute sinusitis. Most of the patients classified as having chronic sinusitis with bronchiectasis had previously had radical sinus operations and subsequent reinfection. The patients with acute sinusitis had previously had local therapy, including penicillin administered intramuscularly, without much satisfactory progress.

After an examination of the nasal passages of a patient having sinusitis with edema of the nasal mucosa it is not difficult to realize the problem of getting any substance, whether in the form of a fluid or a mist, through the edematous ostiums and into the respective sinuses despite shrinkage of the passages with vasoconstrictor drugs. Theoretically one must be reminded of the obstacle offered by the turbinates as baffle plates in disturbing the inflow of the penicillin aerosol. The presence of secretions in the nose also acts as an obstacle in preventing absorption and utilization of the penicillin aerosol.

At the onset of the study it was felt that if penicillin could be brought to all the sinuses in greater concentration and kept there for longer periods of time a more beneficial result could be obtained. Studies were therefore undertaken to determine whether penicillin actually found its way into the sinuses by way of the ostiums or whether it was brought to the sinuses through other channels. Certain radiopaque aqueous substances such as "skiodan" N. N. R. and "diodrast" N. N. R., ranging in concentration from 10 per cent to 60 per cent, were aerosolized into the nasal passages. Immediate follow-up roentgenograms showed that radiopaque material had not found its way into the sinuses. This experiment, simple as it was, seems to imply that penicillin gets into the sinuses by way of the veins and lymphatics from the mucosal lining of the nose rather than by way of the ostiums.

The procedure followed in the treatment and study of the patients included follow-up cultures of the nose, throat and sputum and roentgenograms of the sinuses and chest before and at the conclusion of the treatment. In the early days of the study 16,000 units of penicillin in 2.0 cc. of isotonic solution of sodium chloride were given every three hours except at 3 a. m. Later this was increased to 25,000 units every three hours. "Neosynephrine hydrochloride" N. N. R., 0.25 per cent, was utilized as the shrinking agent before treatment in most cases. If pulmonary disease was present the nasal inhalations preceded the oral inhalations.

Two case histories follow:

CASE 1.—The patient, aged 19, had been given a diagnosis of bilateral chronic pansinusitis with subacute exacerbation. Since the age of 4 she had had almost no sense of smell. She had had frequent exacerbations with innumerable local treatments. Prior to her admission to the hospital the patient had had a fresh exacerbation which persisted for weeks despite local treatments and instillation of penicillin directly into the nose after shrinking and suction. Cultures taken from the nose and throat before treatment showed hemolytic streptococcus, group A, and coagulase-positive hemolytic Staphylococcus aureus. After four days of penicillin aerosol therapy only, preceded by nasal shrinkage and with one daily postnasal wash, the thick purulent nasal discharge became mucoid and disappeared completely on the fifth day. For the first time in years her sense of smell returned. A subsequent check-up revealed no purulent secretions in the nose and pronounced subjective and objective improvement. A culture taken one week after the beginning of the treatment showed the absence of the originally noted virulent organisms.

Summary of Cases of Bronchiectasis

42	Total treated
8	Subsequent operation—no postoperative complications
14	Considered unsuitable for operation—multiple lobe involvement—temporary clinical improvement in hospital—diminution in amount of sputum and in cough—recurrence in most of these cases within one to six months
20	Purely medically managed; involvement of one or two lobes, mostly lingula; marked clinical improvement in 14 cases and remission for as long as a year and a half in 2 cases; no recurrence of pneumonitis in 4 cases under observation for as long as nine months; failure to get a lasting remission in 6 cases for longer than three to five months; repeated courses of therapy necessary in this group
Reactions	Two patients had their first attacks of bronchial asthma; 2 patients had severe generalized urticaria; 4 patients had temporary stomatitis and sore tongue

PULMONARY ABSCESS

We have employed penicillin aerosol therapy in a series of 11 patients with pulmonary abscesses. Seven patients with the aerobic nonodoriferous, postpneumonic type of pulmonary abscess recovered completely. Two patients with the anaerobic, putrid type failed to respond and subsequently recovered with surgical drainage. A third patient with a fulminating putrid pulmonary abscess failed to respond to penicillin aerosol therapy and died shortly after surgical intervention. One patient with a chronic putrid pulmonary abscess was prepared for lobectomy by penicillin aerosol and made an uneventful postoperative recovery. Our observations have impressed us with its value in the aerobic, nonodoriferous, postpneumonic type of pulmonary abscess. Results with the anaerobic, putrid, atelectatic types were disappointing. Doses of 50,000 units of penicillin given at three hour intervals were usually

17. This work was carried on at the Massachusetts Eye and Ear Infirmary.

adequate. Postural drainage was generally carried out prior to each treatment. In the cases of more toxic and putrid disease we employed simultaneously 25,000 units of penicillin intramuscularly. Therapy was continued for at least four weeks. With an effective program of penicillin aerosol therapy it is possible to avoid operation in most of these cases. The occasional intrabronchial instillation of penicillin or streptomycin, depending on the organisms cultured, may also be of tremendous aid in aborting surgical treatment. In most of our cases cure was further confirmed by bronchograms by means of iodized poppy-seed oil 40 per cent. Treatment was employed for a minimum of four weeks and for a maximum of ten weeks. A report of 1 of our cases follows. Detailed case histories may be found in our earlier papers.[18]

One typical patient presented a clinical picture of extreme toxicity associated with a postpneumonic pulmonary abscess. The odor of his sputum was extremely foul. A course of penicillin aerosol for five weeks produced a clinical cure. A bronchogram by means of iodized poppy-seed oil 40 per cent then revealed a small residual cavity, presumably in the lingula. An additional ten days' course of therapy completed the cure.

ACUTE LARYNGOTRACHEOBRONCHIAL EDEMA

Six patients with acute laryngotracheobronchial edema associated with serious infection were treated with penicillin aerosol. The first 3 patients were moribund at the outset of therapy. The conventional methods of employing sulfonamide drugs, penicillin given parenterally and oxygen therapy by catheter, mask and tent had been tried with little benefit. Dramatic improvement was observed as soon as the inhalation program was instituted. Mixtures of 75 per cent helium and 25 per cent oxygen were employed in these patients because of the evidence of localized inflammatory narrowing of the upper part of the laryngotracheal tree. It was the opinion of the many observers that the recovery of these 3 patients could be directly attributed to the therapy described. The other 3 patients were treated with oxygen flow and responded remarkably well. We have observed the most spectacular results in this group of patients.

A brief abstract of 2 cases follows:

Case 1.—A 46 year old man entered the hospital because of sore throat, high temperature and difficulty in breathing of twenty-four hours' duration. Previously he had contracted acute sore throat which was treated with irrigations and high doses of sulfonamide drugs. Just prior to admission the family physician found him struggling for breath. There was pronounced edema of the hypopharynx. In the hospital an emergency tracheotomy was performed. During this procedure he aspirated much blood and massive atelectasis and pneumonia developed. He appeared moribund and cyanotic. Despite suction, oxygen and high doses of penicillin intramuscularly, marked inspiratory stridor, severe cyanosis and anoxia developed and the temperature rose to 105 F. About sixteen hours after hospitalization a program of therapy was instituted consisting of the following: A flow of 75 per cent helium and 25 per cent oxygen was directed through the "vaponefrin nebulizer" which was attached directly to the tracheotomy opening in this fashion. Intermittent suction was carried out at periodic intervals just prior to such therapy. The change was striking almost as soon as this therapy was instituted. The stridor became less pronounced and the patient more rational and cooperative. This treatment was continued for several days; the temperature promptly returned to normal and the signs of atelectasis and consolidation of the base of the right lung improved by clinical and roentgenographic observations. The patient made an entirely uneventful recovery.

PULMONARY EMPHYSEMA AND EMPHYSEMATOUS BLEBS

Patients with chronic pulmonary emphysema generally present a history of cough, progressive dyspnea even at rest, loss of weight and weakness. The lung has lost its "pre-war rubber," and in its place a "synthetic quality" has developed. Many have severe clubbing of the fingers and cyanosis, and a small number have severe emphysematous blebs. Bronchiectasis and evidence of bronchospasm may also be found in many of these patients. They are subject to recurrent bouts of infections of the respiratory tract and their pulmonary reserve diminishes with each bout. The prognosis is generally poor, and progressive respiratory failure ensues. The patients can be made more comfortable with the use of 50 per cent concentrations of oxygen, theophylline ethylenediamine and aerosolized bronchodilator drugs. Supplemental elevation of the diaphragms by manual manipulation in expiration[19] and the use of a proper abdominal belt may be of considerable value. Oral administration of sulfonamide drugs has proved of little value in our patients for the prevention of recurrent infection.

Recently we have observed striking improvement in a series of 7 patients with severe pulmonary emphysema when penicillin aerosol was added to the program described. In one of these patients diffuse emphysematous blebs and a minimal basal bronchiectasis complicated the picture. In another patient a giant acquired cyst occupied the entire upper lobe of the right lung. Five patients had uncomplicated pulmonary emphysema secondary to recurrent bronchial infections. These patients were considerably improved after a course of penicillin aerosol therapy of from one to six weeks. They had been treated with oxygen and bronchodilator drugs first, but despite this more progressive dyspnea, cyanosis and cough developed. After administration of penicillin aerosol their vital capacities improved slightly, and they have been able to maintain this improvement at home while continuing the previously outlined therapy. These remissions have been striking although probably temporary.

CONCLUSIONS

Penicillin aerosol therapy is of definite value in the management of bronchopulmonary disease. It can be carried out best with the simple rebreathing technic described. This may be modified according to the age of the patient and the nature of the illness. For patients manifesting obstructive disease of the respiratory tract streams of helium and oxygen may be developed in the place of oxygen. The penicillin aerosol may also be directed into tents, masks and tracheotomy openings. If indicated, other chemotherapeutic, antibiotic and chemical drugs may be substituted for penicillin. Finally, the penicillin aerosol may be directed nasally for the management of patients with acute and chronic purulent sinus disease, preferably with the technic of intermittent negative pressure and replacement with penicillin aerosol.[18b]

Penicillin aerosol therapy should not be employed by the nasal or pulmonary route for the management of the common cold. This infection generally runs a self-limited course despite all useful therapy, and one must always bear in mind the possible appearance of penicillin-resistive strains after repeated or prolonged use of penicillin aerosol therapy.

19. Barach, A. L.: Inhalation Treatment of Bronchial Asthma, New York State J. Med. 46:1002-1008, 1947

Penicillin aerosol therapy should be reserved for patients having the following conditions: purulent sinusitis, bronchiectasis, pulmonary abscess, infections of the lungs with streptococcic or staphylococcic organisms or with penicillin-susceptible strains of Friedländer's bacillus, acute laryngotracheobronchial edema and infections secondary to underlying primary disease of the lungs, such as pulmonary emphysema, pulmonary cysts and infarcts. Before instituting therapy every attempt should be made to identify the organisms of the nose, throat and sputum.

370 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

DR. WILLIAM J. KERR, San Francisco: We have known for some time that bronchiectasis and some other pulmonary diseases outside of pneumonia will respond favorably to the use of intramuscular or intravenous administration of penicillin and other antibiotics. We now have good evidence, I think, that penicillin is useful in this manner. One must, however, deplore the promiscuous use of penicillin by the oral route or by the use of aerosols. Almost everywhere it is being used for all sorts of nasopharyngeal disturbances or nasal disturbances in the respiratory tract, many of which are not on an infectious basis at all. I for one could not believe that a common cold is an infectious disease, although that is a matter of definition, perhaps, and subject to argument on some other points. One thing which has interested me about the use of penicillin as an aerosol is that one of the patients that we had who was using this method suffered from fungous infection, Monilia albicans infection involving the lungs and possibly other parts of the body. He had been given penicillin intramuscularly without any serious trouble about two months before, and when we tried the aerosol method, almost immediately this young man had a most remarkable attack resembling bronchial asthma; we thought that he was going to die. Fortunately, he recovered from this, and we have not tried it again, but cutaneous tests show remarkable reactions—positive reactions with infinitely small doses of penicillin. Another patient was a man interested in the manufacture of penicillin, and he had much of it available. A few months ago he took some lozenges of penicillin for a sore throat, with good response. About two months later, another sore throat developed, and he took by mouth a large single dose of about 1,000,000 units; the mucous membranes of his nasopharynx and the inside of his mouth, excepting the tongue, then began to burn terrifically. He had remarkable symptoms, and within a few hours he had sloughing of the tissues of the soft palate and in the nasopharynx. It was several weeks before he recovered from this episode. The question arises whether it was sensitivity to the drug taken orally or whether something else had happened which I believe may be of importance in this general field. Many of us are interested in the balance of nature in relation to plant and animal life. The ecologic factors in the body of man and his organisms must be kept in mind. There is fairly good evidence now that if we use some of the antibiotics we can eliminate some of the organisms that live a more or less balanced existence with other organisms in the respiratory tract or the genitourinary tract or the gastrointestinal tract. It is possible that if we eliminate the streptococci, some of the other cocci and Monilia which may be in the mouth in a suppressed state will multiply in great numbers and cause some of the reactions which we have seen. Already there are patients subject to certain diseases which have, after long treatment with penicillin, developed other complications, and these may be on the basis of fungous infection or other infections arising from organisms which ordinarily are in balance or are suppressed. Here may be something of great biologic importance that we must not overlook in the use of the antibiotics.

DR. ALVAN L. BARACH, New York: This interesting paper demonstrates that inhalation of penicillin as an aerosol has therapeutic effectiveness in cases of advanced bronchiectasis, pulmonary abscess and acute lobar pneumonia. It is our purpose, in presenting a relatively new technic, to determine whether this method of administration is required, whether it does anything that intramuscular or oral administration of penicillin will not do. The advantage of topical application of penicillin is illustrated in empyema, in which systemic administration is without value, whereas 30,000 units instilled in the pleural cavity every other day results in cure in the majority of early cases. In some cases of pulmonary abscess observed by Dr. Segal and in our clinic, penicillin aerosol has resulted in cure when previous intramuscular injection of the drug was ineffective. The pathologic situation in certain cases of pulmonary abscess and bronchiectasis may be characterized by the growth of bacteria on a purulent or fibrinopurulent exudate that is not reached by the capillary blood supply. The deposition of penicillin droplets on the bronchoalveolar surface may then result in a local concentration of the drug as well as an effective level in the blood. For prolonged treatment, inhalation of penicillin is also more feasible than either oral or intramuscular administration. Inhalation of penicillin aerosol does result in the disappearance of gram-positive organisms from sputum cultures and the finding of gram-negative bacteria, which we have observed in the majority of approximately 200 cases of bronchopulmonary disease. However, these gram-negative bacteria may disappear spontaneously later or, if their pathogenicity is established, may be treated by other antibiotics. About 15 per cent of treated cases manifest either a red tongue or a black tongue, and in perhaps 20 per cent of the allergic group urticaria develops. These reactions can be handled in various ways. The main objective in the use of penicillin aerosol is to offer the patient not only an effective method but one that he can use over long periods of time. Our penicillin levels in the blood, after inhalation of 50,000 units, which at first were 0.02 unit per cubic centimeter, are now 0.1 to 0.2 unit per cubic centimeter with the same dose. I think that no technic of administration of penicillin aerosol is desired which does not give an effective blood level. In our early use of sulfonamide aerosols we wanted a low blood level and a high topical concentration because of the hazards of long-continued high levels of sulfonamide drugs in the blood; with penicillin we have no such cause for alarm. A reasonably effective level in the blood is an added gain along with topical application of the drug. I think that the series of cases presented by Dr. Segal provides additional justification for the trial of this relatively new technic.

DR. ARTHUR M. OLSEN, Rochester, Minn.: Dr. Segal has demonstrated that penicillin aerosols have a wide range of usefulness in the treatment of serious respiratory disease. For various reasons, my reports on inhalation therapy have been restricted to its use for chronic suppurative bronchiectasis. However, at the Mayo Clinic we have had a limited experience with nebulization therapy in certain other respiratory conditions. For several years we have used nebulizers to moisten the oxygen given after tracheotomy to children who have acute laryngotracheobronchitis. Distilled water or isotonic solution of sodium chloride alone or in combination with propylene glycol have been nebulized by a stream of oxygen which passes through the nebulizer into the tracheotomy tube. The prognosis of this condition has been significantly altered as a result of this treatment. No longer does the bronchoscopist have to maintain a constant vigil to remove the dry crusts which constantly threaten to block the trachea or bronchi. Recently weak solutions of penicillin in isotonic solution of sodium chloride have been employed, and the results have been encouraging. In the treatment of bronchial asthma our results with the use of penicillin aerosol are similar to those reported by Dr. Segal. The aerosol helps to thin out tenacious secretions, and in some instances the volume of sputum has been reduced. However, the results have been temporary and disappointing in our cases of asthma. Four patients who had chronic pulmonary abscess have been treated at the Mayo Clinic with aerosols of antibiotic preparations. Two of these patients who had single pulmonary abscesses of several months' duration were treated with combined penicillin and streptomycin aerosols for four weeks. Both patients were greatly improved, and complete relief of fever, cough and expectoration was obtained. Roentgen examination revealed complete clearing of the lesion in one case and con-

siderable improvement in the other case. The other 2 patients did not respond to aerosol therapy. A fifth patient who had an acute postoperative pulmonary abscess improved after treatment with penicillin aerosol. In my experience patients who had emphysema have not been greatly benefited by aerosol therapy. Poor mixing of tidal and residual air appears to account for the poor results obtained. Perhaps the patients whom we treated were too breathless to inhale the penicillin aerosol efficiently. The concentration of penicillin in the blood has been negligible in these cases, and little penicillin has been excreted in the urine. For those patients who had limited respiratory reserve associated with bronchiectasis, the supraglottic instillation of aerosols has been used to good advantage. We have had little experience with the aerosol in the treatment of sinusitis. However, after successful aerosol treatment of bronchiectasis it is remarkable how much improvement has been observed in the condition of the sinuses. As yet we have not used aerosols in the treatment of acute pneumonias. The development of bacterial resistance to antibiotic preparations has been emphasized by Dr. Segal. In my experience resistant bacteria are likely to appear in pulmonary secretions after treatment with both penicillin and streptomycin. I agree that streptomycin-resistant, gram-negative bacteria are encountered more frequently than gram-positive bacteria which are not sensitive to penicillin. The average daily output of sputum of one of our patients who had bronchiectasis in all five lobes was 800 cc. when he entered the hospital. Hemolytic streptococci were abundant. After four weeks of treatment with penicillin aerosol his daily output of sputum was reduced to 200 cc. Gram-negative bacteria then were demonstrated which were sensitive to streptomycin by in vitro tests. After continued treatment for two more weeks with streptomycin and penicillin aerosols, the output of sputum was reduced to 100 cc. daily and has remained constant. The sputum contained a strain of Escherichia coli in large numbers. Growth of these bacteria was not inhibited in vitro by 200 units of streptomycin per cubic centimeter of culture medium. I agree with Dr. Segal that aerosol therapy with antibacterial agents has a real place in the treatment of respiratory infections caused by bacterial organisms. It seems unlikely that the method will be helpful in combating acute infections of the upper respiratory tract of virus origin. In the further evaluation of this method of therapy I should like to emphasize the necessity of careful bacteriologic studies.

Dr. MAURICE S. SEGAL, Boston: With reference to Dr. Kerr's comments, we too have repeatedly stressed that one should not promiscuously use penicillin aerosol therapy. It has a distinctly limited place and its use should be restricted to those indications which we all have stressed from time to time. We have observed reactions; the onset of bronchospasm, 2 cases of urticaria, and 4 cases of serious stomatitis. In most instances, by changing to another type of penicillin or, as in 2 striking cases, by adding "benadryl," we were able to continue with penicillin aerosol therapy. Dr. Barach has stressed an excellent point: namely, that some of his patients had received parenteral penicillin therapy and sulfonamide drugs with failure prior to receiving the penicillin aerosol therapy. Such was our experience, particularly in pulmonary abscess, staphylococcic pneumonia and several cases of bronchiectasis. Two of our patients with penicillin-susceptible strains of Friedländer organisms had received large amounts of penicillin parenterally without success, but when penicillin aerosol therapy was used, the results were striking, indeed. The question of levels in the blood, I think, will depend a lot on the type of apparatus used, the breathing pattern, the tidal air exchanged, the amount of suppurative disease and the vascularity of the lung. In most instances an effective level in the blood can be obtained with 50,000 and 100,000 unit doses. Our minds should be receptive, albeit critical, regarding the future of all types of aerosol therapy. We may be entering a new era of pulmonary route therapy in place of, or supplementing, the more usual routes. The value of such therapy can be appreciated if one recalls that the inner surface of the lung has an area five hundred times as great as the surface of the body and absorbs so rapidly as to give an effect similar to that of an intravenous injection.

SPERMATOGENESIS AND THE THERAPY OF INFERTILITY

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In recent years the problem of infertility has been undergoing a decided change. Formerly looked on by many physicians as essentially a woman's problem, with little responsibility attached to the husband, it is now considered one in which the husband is probably at fault nearly as often as the wife. Many investigators in the past few years have placed the husband's responsibility in infertile matings at figures that range from 30 to 50 per cent, and even higher. For example, Keshin and Pinck [1] found in a series of 135 cases that defective semen was a factor in 68 per cent. Meaker and Vose [2] reported that the responsibility for infertility was divided between husband and wife in 78 of 100 cases. Lane-Roberts [3] quoted results in study of a series of 26 women who attended an outpatient sterility clinic, in which the semen of the husband showed impaired fertility in 19 instances.

Analysis of Sixty-Five Couples Previously Treated by Physicians for Two to Sixteen Years and Referred Primarily as Gynecologic Problems

Trouble Found Primarily	No. of Cases
Female	21
Male	17
Both male and female	27
Total	65

Male factor important in 44 cases

In a problem like infertility, in which there are so many etiologic considerations, it is often impossible to assign definite responsibility to any one factor in either the husband or the wife. Many times the cause is a combination of several factors which, in the average couple seeking help, combine to make pregnancy impossible. It is generally considered that the fertility of a union is a combination of the individual fertility of each partner and that when the summation of the two falls below a theoretic threshold level clinical sterility exists. Accordingly, some degree of inadequacy on the part of one mate may be offset by a high potentiality on the part of the other.

In analyzing a series of 65 cases primarily referred as gynecologic problems, we found that the major responsibility occurred in the female in 21 instances and in the male in 17, and that there were important etiologic factors in both in 27 cases. It is important to note that the husband was involved in two thirds of the cases.

In the past much attention has been given to the woman from the point of view of obtaining accurate diagnosis and providing therapy; comparatively little

Read before the Section on General Practice of Medicine at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

1. Keshin, J. G., and Pinck, B. D.: Am. J. Surg. 66:346, 1944.
2. Meaker, S. R., and Vose, S. N.: Nature of Human Infertility, J. A. M. A. 118:1426 (Oct. 26) 1940.
3. Lane-Roberts, C.: Sterility and Impaired Fertility, New York, Paul B. Hoeber, Inc., 1939.

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attention has been given to the same problem in the man. However, in view of the recently recognized high incidence of masculine abnormalities, investigation and therapy of the man must be adequately correlated with the diagnosis and treatment of the woman.

SPERMATOGENIC PHYSIOLOGY

Spermatozoa are produced in the seminiferous tubules of the testes under the stimulative influence of pituitary gonadotropic hormones. According to current theory, the so-called follicle-stimulating fraction of the anterior pituitary stimulates sperm development and the luteinizing factor causes the testicular interstitial tissue to produce male hormone. Male hormone acts on the accessory sex glands, stimulating their activity and external secretion.

Mature sperm develop from primitive spermatogonia which pass through the stages of primary spermatocyte, secondary spermatocyte and spermatid in the process of maturation. The successive stages of development proceed from the periphery of the tubule to the center of the lumen, so that when the spermatozoa are developed they are released into the lumen and transported through the efferent ductules into the epididymis. The epididymis serves as a storage place for sperm, where they apparently ripen and become fully mature. Many investigators believe that the further maturing of the sperm in the epididymis endows them with independent motility. Semen, at ejaculation, is a mixture of sperm with the secretions of the epididymis, vas deferens, seminal vesicles, prostate, bulbourethral gland and urethral gland. The bulk of seminal secretion generally comes from the prostate.

Little is known concerning the time required from the onset of development of sperm as spermatogonia to their appearance in the ejaculate. No significant data are available for human beings. In the guinea pig, however, Toothill and Young [4] deduced that fourteen to sixteen days were required for sperm to traverse the male tract. Whether a similar time interval is necessary in man is a question. Numerous reports have suggested extremely prompt therapeutic responses, which, however, could conceivably be explained by an emptying out of the more distal portions of the tract under the stimulation of treatment.

SEMEN REQUIREMENT FOR FERTILITY

There is much conjecture as to what constitutes an adequately fertile specimen of semen. Arbitrary average standards have been set, and we know that many fertile males produce semen which falls into this category (fig. 1). It is generally accepted that a normal specimen of semen will contain a volume of 2 to 5 cc., a count of 75 to 100 million spermatozoa per cubic centimeter, with approximately 85 per cent normal morphologically (figs. 2 to 6) and 85 per cent actively motile. The specimen will be of an arbitrary normal viscosity and should liquefy readily. How far a specimen may deviate from these standards and still be fertile is, of course, not known. It is logical to assume that there can be no hard and fast criterion, since much will depend on the fertility level of the partner.

4. Toothill, M. C., and Young, W. C.: Anat. Rec. 50: 95, 1931.

Whether nature has been needlessly abundant in producing so many million sperm per ejaculate to fertilize but one egg is still a philosophic question. However, more and more evidence seems to indicate that a fairly large number of sperm are required to reach the egg before fertilization will occur. The work of Rowlands [5] and others on hyaluronidase gives support to the view that some enzyme such as hyaluronidase is transported by the sperm to the egg, and must be present at the site of fertilization in adequate amounts to facilitate penetration of the egg. There is support of this view in observations on lower animals, in which a large excess of sperm is known to be needed for fertilization; this has been shown by A. Tyler [6] to be due to the necessity for neutralizing excess specific egg substances present in the medium.

Some investigators have reported the occurrence of fertilization when the semen specimens have been quite subnormal. Hotchkiss,[7] for example, has reported the occurrence of pregnancy, using centrifuged insemination specimens, in an instance in which the count was as low as 6.5 million per cubic centimeter. In a few cases we have utilized for artificial insemination specimens

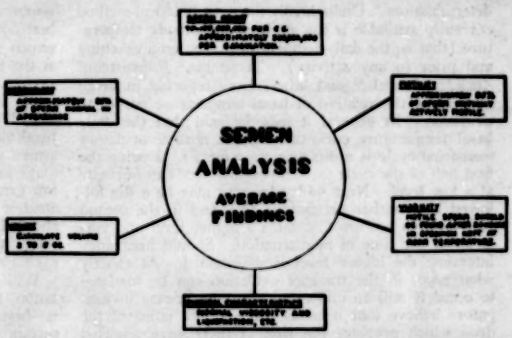

Fig. 1.—"Normal" standards for semen in fertile persons. Specimen should be collected in clean glass container after three or four days' continence and preferably examined within an hour of ejaculation. At least two specimens should be evaluated.

of the husband's semen which were about 50 per cent below average and have obtained pregnancies. In view of this it is important to get the maximal improvement obtainable in even apparently hopeless cases, for it is impossible to predict when a relatively poor specimen may prove effective.

CORRELATED THERAPY

Theoretically, there are only about thirteen days in the year when the average woman may conceive. By most recent estimates, the life of the unfertilized ovum after extrusion is probably no more than twenty-four or forty-eight hours. Some investigators have even stated that the actual length of time during which the ovum may be capable of being fertilized is only a period of several hours. In view of this fact any therapy of sterility must take into account the necessity for providing an adequate specimen of semen at the approximate time of ovulation.

5. Rowlands, I. W.: Nature, London 154: 332, 1944.
6. Tyler, A.: West. J. Surg. 50: 126, 1942.
7. Hotchkiss, R. S.: Fertility in Men, Philadelphia, J. B. Lippincott Company, 1944.

It is highly important, therefore, to determine the time of ovulation as accurately as possible and to make every effort to obtain the maximal quality of semen at that time. Various technics have been employed to determine the time of ovulation. These include the analysis of daily vaginal smears, sequential endometrial biopsies, electrometric recordings and pregnandiol determinations. Undoubtedly the most practical method currently available is the study of basal body temperature (that is, the daily temperature taken on awakening and prior to any activity). Tompkins,[8] Rubenstein,[9] Zuck,[10] Greulich[11] and others have reported in detail concerning the relation of basal temperature curves to ovulation. In general it may be said that the daily basal temperature curve during the normal ovulatory menstrual cycle is a diphasic one (fig. 7). During the first half of the cycle the temperature tends to fluctuate at a low level. Near midcycle there may be a dip followed by a rather precipitous rise, and in the second half the temperature maintains a higher level and falls at about the time of menstruation. Should pregnancy intervene the higher level is maintained. At exactly what point in the tracings ovulation can be assumed to occur is still an undecided question. Some investigators believe that it takes place at the point of the drop which precedes the rise. Others have reported that ovulation does not occur until immediately after the temperature has started to rise. Greulich,[11] for example, in an interesting investigation noted the temperature curves in a number of patients prior to pelvic operative intervention and then studied the development of corpus luteum as found at operation as a criterion of when ovulation had occurred. He concluded that ovulation does not take place until after the temperature rise occurs.

Fig. 2

Fig. 3

Fig. 2.—Smears of some of the commoner types of normal and abnormal spermatozoa stained after the method of Kesty and Hamblen: (1) double head; (2) cytoplasmic mass; (3) round head, and (4) normal.

Fig. 3.—Normal and abnormal forms: (1) double tail; (2) cytoplasmic mass; (3) normal, and (4) abortive.

Fig. 4

Fig. 5

Fig. 4.—Normal and abnormal forms: (1 and 3) tapering head; (2) normal, and (4) pinhead.

Fig. 5.—Normal and abnormal forms: (1) two nuclei; (2) double head; (3) normal, and (4) abortive.

By the observation of tracings of given patients over a period of a few months one may form a reasonably accurate estimate of the average time of occurrence of ovulation in that particular patient. The timing of coitus relative to ovulation depends on the speed of travel of sperm and egg and their periods of viability. Roughly it may be estimated that coitus approximately twelve hours after actual ovulation would be well timed.

That pregnancy does ensue on occasions when the apparently fruitful coitus has taken place several days distant from the theoretic time of ovulation is undoubtedly true. In such instances it is conceivable that under certain circumstances spermatozoa may remain viable and maintain their fertilizing capacity for several days in the fallopian tubes. It is also conceivable that the ovum at times may remain in the tubes and be capable of being fertilized for several days beyond the average.

However, in dealing with infertile patients it is reasonable to assume that the most we can hope for is the average physiologic relationship. Therefore it is important that the best specimens of semen be obtained at the time of ovulation. Since in many instances we are dealing with husbands whose semen potentialities may be relatively low grade, management of the husband should be correlated with the wife's cycle.

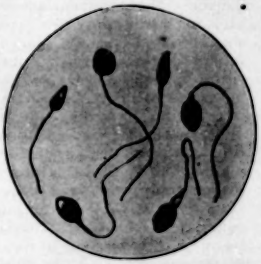

Fig. 6.—Normal sperm, anteroposterior and lateral views.

With such correlation in view, it is best to follow certain general rules. For example, to avoid wasting a possibly good specimen, it is not sound to perform semen analysis a few days, or even three or four days, before ovulatory time unless the specimen is to be used for artificial insemination. A good specimen may otherwise be wasted, and in a male with relatively low fertility the ability of quick regeneration is not to be expected. In the normal male the spermatozoa are rapidly and readily regenerated, and it is generally believed that emptying of the epididymis and other factors furnish additional stimulation for production of sperm, but this stimulation is probably not adequate in the abnormal case. It is preferable to take semen specimens for evaluation purposes at about the time of onset of the wife's period. In that way there is a considerable interval of time during which spermatic regeneration may occur. For the same reason it is advisable to restrict coitus to those days of the month which would theoretically be most likely to prove fruitful.

Relative to artificial insemination using husband's semen, it should be stated that this procedure is of conjectural value except in a few specific instances in which delivery is faulty, or in situations in which one wishes to evaluate specimens at the time of ovulation.

The treatment of male infertility requires careful attention to general health and well-being as well as

8. Tompkins, P.: Use of Basal Temperature Graphs in Determining Date of Ovulation, J. A. M. A. **124**: 698 (March 11) 1944.
9. Rubenstein, B. B.: Endocrinology **22**: 41, 1938.
10. Zuck, T. T.: Am. J. Obst. & Gynec. **36**: 998, 1938.
11. Greulich, W. W.; Morris, E. S., and Black, M. E., in Proceedings of Conference on Problems of Human Fertility, 1943, p. 37.

to therapy designed toward correcting any genitourinary pathologic conditions. Satisfactory improvement often follows regulation and improvement in dietary habits; regulation of working hours; avoidance of fatigue and strain, both physical and mental; improved program for recreation and exercise, and avoidance of excessive smoking and use of alcoholic beverages.

Various pharmaceutic agents have been used in attempting to improve the quality of semen in cases in which there is no tubular obstruction and in which gonadal atrophy, if present, is incomplete. Theoretically, pituitary gonadotropic preparations would afford the most effectiveness, but unfortunately the therapeutic results from these substances are inconsistent and often disappointing. Many of the so-called pituitary preparations on the market are those of chorionic gonadotropin which contain essentially the luteinizing fraction. These would not be expected to have much effect on sperm production. Whatever effect they might conceivably have on semen could be mediated through the testicular interstitial tissue and production of male hormone. The latter seems to be an important agent in maintaining sperm motility, possibly indirectly through the accessory sex glands.

There are a few preparations which are said to contain fairly substantial amounts of follicle-stimulating hormone. It is our opinion, however, that all these preparations in moderate dosage are weak. In utilizing them in enormously high dosage we have obtained some satisfactory but limited results. Administration of a preparation of equine gonadotropin [12] in daily dosage of 4 to 5 cc. for two week intervals has apparently furnished definite stimulus to spermatogenesis in a few instances. For example, in a man aged 56 whose sperm count on several occasions showed a low concentration and a low motility, a dosage of 5 cc. daily brought the count up to 123 million per cubic centimeter with 50 per cent motility following one 2 week cycle, and then with the addition of a little methyltestosterone and prostatic massage over another two week cycle the semen increased to 183 million per cubic centimeter with 75 per cent motility. In a patient of this type who is certainly not in the age group of maximum fertility it seems fairly reasonable to credit the treatment with the degree of improvement observed. However, it must be emphasized that such therapeutic effectiveness is the exception rather than the rule. Our series with this preparation is as yet too small to permit an accurate evaluation or any recommendation of its use, but the results thus far would appear to justify further experimentation, especially if more potent material becomes available.

In certain patients male hormone may be of value in improving sperm motility. The use of small doses, such as 5 mg. of methyltestosterone daily by mouth, coincidental with gonadotropic therapy helps attain some degree of improvement in motility. In large doses testosterone is said to depress spermatogenic activity through its inhibitory effect on the pituitary.

Many other agents have been utilized in treating seminal inadequacy. Thyroid, for example, has long played an important role and in instances in which there is some evidence of subnormal metabolism may prove useful. However, its administration should be limited to those persons who are thyroid deficient because continued use of it by patients with normally functioning thyroid glands may ultimately cause depression of their own thyroid activity, as pointed out by Farquharson,[13] Shelton [14] and others.

Amino acids, notably arginine, appear to be valuable as adjuvant therapy. It has been demonstrated by Shettles,[15] Zittle [16] and other investigators that this substance is an important constituent of the sperm head. Shettles found that even a temporary deficiency of arginine in the diet may cause pronounced disturbances of spermatogenesis in human beings. If there is evidence of nutritional inadequacy a suitable amino acid concentrate should be prescribed.

Vitamin B complex apparently plays an important role in sperm metabolism, although the details of this are not completely known. Biskind and Falk [17] have reported a good percentage of successful results in utilizing vitamin B complex in therapy of seminal inadequacy. A dosage of 50 mg. of thiamine daily with crude liver extract and other factors of the B complex was employed in a recently reported series.[18] MacLeod [19] considers vitamin B complex one of the most important medicaments that can be given to improve sperm motility.

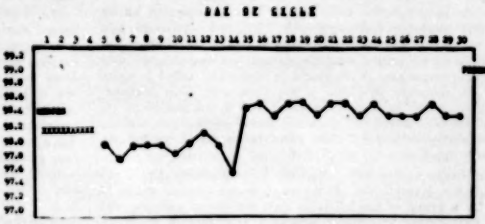

Fig. 7.—Basal temperature curve in an ovulatory menstrual cycle during which pregnancy occurred. Note low level during preovulatory phase, precipitous rise at ovulation and high postovulatory level. With pregnancy the higher level is maintained.

Pregnenolene, an intermediary in the production of progesterone from cholesterol, has been found to stimulate spermatogenesis in lower animals. We have used it experimentally in a daily dosage of 50 mg., but results as yet are inconclusive.

Another therapeutic adjuvant is the use of the dextrose-Ringer's douche. MacLeod has shown that spermatozoa metabolize dextrose for motility. Hotchkiss and MacLeod [20] reported a series of infertile cases in which the use of a buffered Ringer's-dextrose douche shortly before intercourse appeared to be the one factor which brought about pregnancy in a substantial percentage of difficult cases in which etiologic factors were vague. The Ringer's-dextrose douche has more physiologic basis than the older alkaline douche and is used as a routine procedure by many investigators.

12. Supplied through the cooperation of Mr. F. D. Studer of E. R. Squibb & Sons.

13. Farquharson, R. G., and Squires, A. H.: Tr. A. Am. Physicians **56**: 87, 1941.
14. Shelton, E. K.: To be published.
15. Shettles, L. B., in Proceedings of the Conference on Sperm Biology, 1942, p. 30.
16. Zittle, C., in Proceedings of the Conference on Sperm Biology, 1942, p. 42.
17. Biskind, L. H., and Falk, H. C.: Infertility in Male and Vitamin Therapy, J. A. M. A. **123**: 706 (July 3) 1943.
18. Biskind, L. H.: Read at the meeting of the American Society for the Study of Sterility, 1946.
19. MacLeod, J.: Personal communication to the authors.
20. MacLeod, J., and Hotchkiss, R. S.: Am. J. Obst. & Gynec. **46**: 424, 1943.

CONCLUSION

The problem of sterility need not necessarily be one for the specialist. True, a certain percentage of patients will present pathologic conditions that require treatment and observation by the gynecologist or the urologist, but there are indeed a fair percentage which can be handled by the general practitioner who is willing to devote the time and careful study required.

The masculine role has been purposefully stressed in this study of infertility in an effort to emphasize that the husband is probably at fault nearly as often as the wife and merits more than the cursory attention which is so often given.

ABSTRACT OF DISCUSSION

DR. WALTER W. WILLIAMS, Springfield, Mass.: The adequate staining of a specimen of spermatozoa of a sperm population, contrary to the general belief, is easily done in around three to five minutes. In a pathologic specimen of semen one sees the shadow of the centrosomic material in the base; there is a narrow nucleus, and at times a small cell which is pathologic. The general picture is quite different from the normal. The essentially normal cell, shows the neck, the body, the nucleus, the centriolar mass and the acrosome. A cell of this nature rotates, so it is difficult to get the cellular morphology. In the examination of semen occasionally double forms are described. Usually they are due to a lack of the development of the centriole in which the cells do not become separated during the last stages of spermatogenesis. The actual filament, the narrow nucleus and the enlargement of the middle piece are all readily observed with a properly stained specimen. A cell with a lack of acrosomic development is ordinarily called a round cell. In spermatic dysplasia or hyperplasia, in many instances the germ plasm is severely diseased and if stimulation of the germ plasm is attempted there are fewer spermatozoa and the quality becomes poorer. The germ plasm is not in fit condition to function.

DR. FRED A. SIMMONS, Boston: I congratulate Dr. Tyler for his fine presentation. However, I do not think it would be fair for a group of specialists to leave this room with the idea that testosterone or gonadotropin have any place in the treatment of the average sterile man or woman. I have seen patients in the East who have been treated by the family physicians and by specialists with these hormones, and, as far as I can make out from the off-the-record remarks of persons who worked in the laboratories where these hormones are used, there is no place for them at the moment in the average case of sterility. Dr. Tyler mentioned therapeutic agents, and I think he probably would agree that the most valuable therapeutic agents in the treatment of the infertile male are things in the hands of all practitioners. The sterility problem is no mystery. All you have to do is spend the time on it. The agents which I would suggest as adjuncts to the measures already outlined would be the denial to the husband of the use of tobacco in any form or the use of alcohol in any form, an adequate high protein diet, an adequate amount of exercise, particularly in those men who may have been active in exercise in college or high school days, a degree of continence and reduction in the frequency of intercourse as the fertile time is approached. Physicians doing this work often get patients who are told they are sterile. If the physician is not interested in this subject, let me suggest that the patient be sent to someone who is. Don't make the mistake of telling him, "In two or three years you will probably have a baby. If not, come around." The thing to do is to get a specimen, and if that is not normal on two occasions and you don't want to treat the patient, send him to someone who knows how. If you do want to treat him, then pay attention to what Dr. Tyler said to you this morning.

DR. EDWARD T. TYLER, Los Angeles: The sperm morphology is an extremely important factor. I cannot say that the staining and observation of these smears is simple. It is time-consuming. It takes a good technician quite a while to master the technic of making a smear that is not full of extraneous material, in which one can actually observe some real distinctions in the spermatozoa. When the technician is familiar with the procedure of demucifying the slides and so forth she is able to do it rather rapidly. I agree with Dr. Williams on the importance of morphology. I hope I haven't left you with the thought that pituitary gonadotropins are the things to use. Most of these preparations that have been used are ineffective. I qualified my remark by saying that this particular preparation which we have been using has only been used in relatively few cases. I do say, however, that when we have tried heavy dosage on some of these patients, while the percentage isn't high we occasionally have gotten a successful result. The only reason I recommend trying it in certain cases is because one's hands frequently are so tied that one is willing to try anything, and if this preparation has any possibility of working, I believe it is worth a trial if the patient can afford it. In a few cases it has apparently helped. But we do not consider that there has been enough success to recommend this agent. Another point which I should have emphasized was all those factors which Dr. Simmons stressed and which probably are more important than anything else, namely, general health, exercise, restriction of alcohol, if that seems to be a factor, and prostatic massage, which is extremely useful. It is done particularly in cases in which sperm motility remains low. Prostatic massage is given about three times a week routinely.

DR. L. C. BURWELL, Los Angeles: I should like to have Dr. Tyler elaborate more on the use of tobacco. Abstinence for how long? And should it be abstained from by only the man or both the man and woman?

DR. EDWARD T. TYLER, Los Angeles: I think if you can secure abstinence from tobacco for the duration of the time you are observing the patient, that is the best. We have had a few patients who were chain smokers; where we believe that tobacco alone was the factor which was depressing their semen. If one is going to have them abstain, the point is to keep them off it right along. Sometimes you don't get cooperation. I remember 1 patient for whom we tried everything and he was taking a lot of alcohol. He seemed to think he needed it to keep him going in his work. We agreed to let him go for a while without depriving him of alcohol, because we knew if we told him he would have to stop drinking we wouldn't get anywhere at all. After a short while we decided that there was no use in temporizing any longer. We asked him definitely to stop drinking completely. Whereupon, we didn't see him again. I think in some of these cases the physician has to try to do the best he can with the patient, but the actual importance of these things can't be overstressed.

DR. L. C. BURWELL, Los Angeles: How about the effect of nicotine on the ovum?

DR. EDWARD T. TYLER, Los Angeles: It is difficult to determine in mammals, because it is so difficult to get mature ova from these experimental mammals. One certainly could tell something about it in invertebrates, from which eggs are readily obtained, but whether results can be transposed from invertebrates to mammals is questionable. I don't think it has been feasible from a technical point of view to observe any results directly on the ovum.

Agricola, Paracelsus and Occupational Medicine.—Nearly twenty years after Paracelsus sent his manuscript on mining diseases to the public authorities for their approval of its publication—he never received an answer or heard of it before his death—and twelve years before it was published by a faithful follower from the long-hidden sheets, there came out in 1556, from the famous press of the old friend of Paracelsus at Basel, Froben, a book, "De re metallica," on mining. Its author, George Agricola, like Paracelsus a physician but more famed as a chemist and technologist, raised himself with this book to the foremost place as a mining expert of greatest authority, and for scores of years the book kept the rank of the encyclopedia of mining. . . . In spite of all the injustice, ignorance and enmity which Paracelsus met with, his pioneer work in the field of occupational diseases never was disputed.—Frankel, Walter K.: Paracelsus, the Founder of Occupational Medicine, *Occupational Medicine*, March 1947.

CESAREAN HYSTERECTOMY

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This study was undertaken to determine the present status of cesarean hysterectomy. An operation originally devised to combat postcesarean infection and hemorrhage, its indications have gradually been widened to include many conditions for which removal of the uterus is necessary or desirable. In 1876, Porro [1] extirpated the gravid uterus for the avowed purpose of reducing the frightful mortality then associated with cesarean section. Due credit must be given Porro's carefully planned effort because in 1874, experimenting with pregnant rabbits, he demonstrated the feasibility of this procedure.

However, Porro was not the first to consider or the first to perform cesarean hysterectomy. In 1768 Cavallini [2] made the statement that "all things having been duly weighed, I do not doubt that the uterus is not at all necessary to life, but whether it may be plucked out with impunity from the human body we cannot be certain without a further series of experiments of this kind which perhaps a more fortunate generation may obtain."

In 1809 Michaelis [3] of Marburg pointed out that "when in ignorance the uterus has been cut away, the reaction has been much less. It is indeed a question whether cesarean section would not be made less dangerous if with it were combined the extirpation of the uterus, an organ which is, after all, under such circumstance nothing but harmful." Blundell in his lectures at Guy's Hospital in 1828 said, "In speculative moments I have sometimes felt inclined to pursuade myself that the danger of the cesarean operation might be considerable diminished by the total removal of the uterus. Perhaps this method of operating may prove an eminent and valuable improvement." Blundell [4] also described the survival of 3 out of 4 pregnant rabbits in which the uterus had been extirpated.

Actually the first cesarean hysterectomy was reported by George H. Bixby [5] in 1869 in an article entitled "Extirpation of the Puerperal Uterus by Abdominal Section." The patient was operated on by H. R. Storer because of dystocia arising from a pedunculated and adherent fibroid. The cesarean section was followed by hysterectomy because of uncontrollable bleeding. The cervical stump was sutured to the lower part of the abdominal incision; the patient died in seventy-eight hours.

This operation is cited by Porro, who described a technic similar to that used by Storer. At first Porro's proposal was received with disfavor in spite of the fact that his patient survived. Undaunted by the failures of several Italian obstetricians, Spaäth and Carl and Gustave Braun adopted this procedure. Compared to the almost 100 per cent mortality of the classical cesarean operation at that time, their results were startling and encouraging.

In 1880 Isaac E. Taylor [6] reported the second American case in which the patient was operated on early and "by the method of Lister." The pedicle was dropped in the pelvis and no drains were employed. Unfortunately this patient died on the twenty-sixth day of embolism following phlegmasia dolens. Eighteen days before Taylor, Veit,[7] of Bonn, employed the same technic of returning the pedicle to the pelvis. His patient also died. The same year Robert P. Harris [8] analyzed the 50 known operations of hysterectomy following cesarean section and reported a 58 per cent mortality. By 1883 the total reported cases numbered 134. These were summarized by Clement Godson.[9] Godson made two improvements: (1) He used a transverse incision of the lower portion of the uterus for removal of the baby and (2) he left the placenta in situ. He compared intraperitonealization and extraperitonealization of the uterine pedicle and showed that intraperitoneal placement of the stump was associated with a 77 per cent mortality against a 53 per cent mortality for extraperitoneal placement.

The basic premises of the operation described by Porro include (1) the complete ablation of the uterus and its appendages accomplished by the use of some type of occluding ligature, often metallic; (2) the external placement of the uterine pedicle, and (3) the employment of cul de sac and/or abdominal drainage. These technical procedures are mentioned only because cesarean hysterectomy now differs so greatly from that originally proposed. In the first 50 cases reported, only the first was performed by Porro, but due credit must be given him because his patient survived and through his writing the world learned of a new and valuable procedure.

Almost coexistent with the introduction of cesarean hysterectomy came the new concept of infection, surgical technic and cleanliness. In evaluating the statistics compiled before 1870, as compared with those after that date, it becomes difficult to decide whether the new found knowledge concerning infections, plus newer concepts of physiology, may not be as important as the procedure recommended by Porro. Physicians and surgeons in practice today are apt to forget that for the period of one hundred years preceding 1876 the mortality associated with cesarean section in such institutions as La Maternité in Paris and the Lying-In of Vienna approached 100 per cent. They also forget that it was not common practice to suture the wound in the uterus. It is surprising that any patient should have survived rather than that so many died. It was not until 1880 that Max Sanger introduced the use of a large number of sutures, deep and superficial, in the uterus in order to secure a complete closure and thereby control hemorrhage and prevent the lochia from draining into the peritoneal cavity. This operation effectively reduced the mortality of the cesarean section and competed with the increasing popularity of the

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Read before the Section on Obstetrics and Gynecology at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

1. Porro, E.: Della amputazione utero-ovarica come complemento di taglio cesareo, Milan, frat. Rechiedei, 1876.
2. Cavallini, J.: Medico-Chirurgical Experiences on the Successful Excision of the Uterus in Certain Animals, Florence, 1768; cited by Godson.[9]
3. Michaelis, G. P.: Lucina 5:87, 1809; cited by Godson.[9]
4. Blundell, J.: Lectures on the Theory and Practice of Midwifery, Lancet 2:163, 1827.
5. Bixby, G. H.: Extirpation of the Puerperal Uterus by Abdominal Section, J. Gynec. Soc. Boston 1:275, 1869.
6. Taylor, I. E.: Gastro-Hysterectomy, or the Recent Modification of the Cesarean Section by Dr. Porro, Am. J. M. Sc. 80:115, 1880.
7. Veit, G.: Case Report, New York M. J. 32:407, 1880.
8. Harris, R. P.: The Results of the First Fifty Cases of "Cesarean Ovaro-Hysterectomy," Am. J. M. Sc. 80:129, 1880.
9. Godson, C.: Porro's Operation, Brit. M. J. 2:143, 1884.

Porro section, introduced but a few years before. It is also impossible to comprehend why there was open antagonism to the use of uterine sutures, but opponents such as James Edmunds [10] were vociferous as late as 1902. Until the middle of the nineteenth century, although cesarean section had been known and practiced on living women for two hundred and fifty years, suturing had been employed on only four occasions.

On the twenty-fifth anniversary of Porro's original paper, a monograph was published in Rome, "L'Operazione Cesarea," [11] with detailed statistics on the 1,097 operations reported as of that date, showing a mortality of 24.8 per cent. In the year of the publication, 1901, the mortality was 18.1 per cent. As had been originally urged by Harris [12] in 1880, efforts were made to perform the operation earlier, and the mortality was decreasing.

TABLE 1.—*Indications for Cesarean Hysterectomy*

Fibroids	**25**
Uncomplicated fibroids	11
Previous cesarean section and fibroids	6
Prolonged labor and fibroids	3
Fibroids obstructing labor	2
Toxemia and fibroids	1
Hypertension and fibroids	1
Placenta previa and fibroids	1
Uterine bleeding	**15**
Uncontrollable bleeding at cesarean section	6
Abruptio placentae	5
Placenta previa	3
Placenta accreta	1
Intrapartum infection	**4**
Preeclamptic toxemia	**4**
Arrested pulmonary tuberculosis	**1**
Carcinoma of breast	**1**
Essential hypertension and difficult labor	**1**
Sterilization	**1**
Gangrene of bowel and peritonitis	**1**
Intrauterine deaths (4); operation done at 32 weeks	**1**

TABLE 2.—*Relationship of Age and Parity*

	Parity					
Age	I	II	III	IV	V+	Total
24-28	2	4	1	1	..	8
29-33	5	4	3	2	..	14
34-39	7	8	4	1	4	24
39-41	2	..	4	..	2	8
Total	16	16	12	4	6	54

Porro recommended hysterectomy whenever cesarean section was indicated. With improvements in surgical technic, the introduction of uterine sutures and aseptic precautions, it seldom was necessary to remove the uterus. During the subsequent decades intrapartum infection became the most important reason for performing cesarean hysterectomy. In 1921 Williams [13] stated that "the prime indication is cesarean section late in labor, particularly when signs of intrapartum infection are present." Today, however, as shown by Briscoe,[14] infection is not the commonest cause for cesarean hysterectomy. Low cervical or extraperitoneal cesarean section is often the procedure of choice when abdominal delivery is advisable and intrapartum infection is present.

10. Edmunds, J.: Cesarean Section, Brit. M. J. **2**:1564, 1902.
11. Truzzi, E.: L'operazione cesarea, Porro, Rome, 1901.
12. Harris, R. P.: The Porro Modification of the Cesarean Operation in Continental Europe, Am. J. M. Sc. **79**:135, 1880.
13. Williams, J. W.: A Critical Analysis of Twenty-One Years' Experience with Cesarean Section, Bull. Johns Hopkins Hosp. **32**:173, 1921.
14. Briscoe, C. C.: Cesarean Section Morbidity and Septic Mortality in Relation to Type of Operation, Am. J. Obst. & Gynec. **48**:16, 1944.

In the recent writings of Phaneuf,[15] Lash and Cummings,[16] Lazard,[17] Gustafson,[18] Wilson [19] and others the following indications are considered: (1) intrapartum infection when abdominal delivery is indicated; (2) uterine hemorrhage, uncontrollable after cesarean section, premature separation of the placenta and placenta previa; (3) uterine fibroids; (4) rupture of the uterus; (5) carcinoma of the cervix; (6) placenta accreta; (7) cervical or vaginal stenosis; (8) pulmonary tuberculosis; (9) chronic nephritis, and (10) as a method to effect sterilization.

In our series of 54 patients, uterine fibroids (25) are the prime indication (table 1). In 11 of these 25, the fibroids were uncomplicated but of such number, location or size that it was felt safer to perform an elective cesarean hysterectomy at term than to permit the patient to labor and subject her to a subsequent hysterectomy. Six women with fibroids had had a previous cesarean section; 3 had fibroids and prolonged labor; 2 had fibroids obstructing the birth canal, and in 3 others fibroids were associated with toxemia or placenta previa.

Cesarean hysterectomy was performed in 15 patients for uterine bleeding. Of these 6 had uncontrollable bleeding at the time of cesarean section, 5 had abruptio placentae, 3 had placenta previa and 1 had a placenta accreta. The operation was performed four times for preeclamptic toxemia and only four times for intrapartum infection. The remaining 6 women had cesarean hysterectomy for as many miscellaneous reasons, only one hysterectomy being for sterilization. In 1921 Williams advocated cesarean hysterectomy as the operation of choice when cesarean section was performed the third time. Fifteen in his series of 57 were performed solely to effect sterilization.

Although Phaneuf [20] expressed the opinion that there still is a place for the operation when pregnancy is associated with fibroids or placenta accreta, he stated that in recent years the number of hysterectomies following cesarean section is decreasing.

In 1922, J. W. Harris [21] reported an incidence of 28.7 per cent for cesarean hysterectomy with cesarean section at Johns Hopkins Hospital, while from 1932 to 1942 Monahan [22] reported only 11.3 per cent from the same hospital. At Michael Reese Hospital, as reported by Stein and Leventhal,[23] for the period 1922 to 1927, the incidence of cesarean hysterectomy was 0 per cent, while in the period 1928 to 1932 it was 1.65 per cent. With the current increased popularity and safety of the cesarean section and the broadening of the indications, one might expect the incidence of cesarean hysterectomy to show a relative decrease. Our study indicated that this is not the case. At present at Michael Reese Hospital the incidence of cesarean hysterectomy–cesarean section is 4.5 per cent.

15. Phaneuf, L. E.: Porro Cesarean Section, Am. J. Surg. **13**:65, 1931.
16. Lash, A. F., and Cummings, W. G.: Porro Cesarean Section, Am. J. Obst. & Gynec. **30**:199, 1935.
17. Lazard, E. M.: An Analysis of Five Hundred and Seven Consecutive Cases of Cesarean Section, West. J. Surg. **46**:6, 1938.
18. Gustafson, G. W.: Hysterectomy in Pregnancy, Labor and the Puerperium, Am. J. Obst. & Gynec. **43**:221, 1942.
19. Wilson, K. M.: The Role of Porro Cesarean Section in Modern Obstetrics, Am. J. Obst. & Gynec. **50**:761, 1945.
20. Phaneuf, L. E., in Discussion in Gustafson.[18]
21. Harris, J. W.: A Study of the Results Obtained in Sixty-Four Cesarean Sections Terminated by Supravaginal Hysterectomy, Bull. Johns Hopkins Hosp. **32**:318, 1922.
22. Monahan, C. P.; Connolly, H. F., and Easterman, N. J.: The Experience of the Johns Hopkins Hospital with Cesarean Section, Am. J. Obst. & Gynec. **44**:909, 1942.
23. Stein, I. F., and Leventhal, M. L.: An Analysis of Three Hundred and Eighty-One Cesarean Section Cases in a Ten Year Period at Michael Reese Hospital, Am. J. Obst. & Gynec. **30**:192, 1935.

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The age of the patients varied from 24 to 41, with 32 patients more than 34 years old. Relationship of age and parity is given in table 2. The average age was 34.2 years. It will be noted that hysterectomy was performed sixteen times in primiparas. Over half of these patients were more than 34 years old. The indication was fibroids in 12 of the 16, revealing that as older women become pregnant, pregnancy is more apt to be complicated by conditions arising in the older age group.

The American literature for the period 1931 to 1945 includes reports of 731,690 deliveries in which the incidence of cesarean section and of cesarean section with hysterectomy is also given. For obvious reasons this survey is not complete, because reliable statistics are limited to the larger maternity hospitals and teaching institutions. However, by including reports from various sections of the United States, state survey reports and smaller hospital reports, one can determine a fairly accurate incidence of cesarean section during the years 1931 to 1945.

Table 3 is the result of this study. In the 731,690 deliveries the incidence of cesarean section is 3.42 per cent. It will be noted that generally where the cesarean incidence is up the mortality is down, and vice versa. This leads to the observation that the sum of the incidence percentage and the mortality percentage gives a fairly constant figure, which can be expressed as 6.0 plus or minus 2.0. The only real exception to this constant comes from Los Angeles, where the reported incidence of cesarean section is high. The over-all average maternal mortality for cesarean section in the United States is 2.14 per cent.

There are 25,027 cesarean sections reported, and hysterectomy was performed six hundred and thirty-six times, once in every 39 cesarean sections, an incidence of 2.54 per cent. This represents 1 cesarean hysterectomy in every 1,150 deliveries. The average mortality is 5.2 per cent.

In our series cesarean hysterectomy was performed in 54 of 1,202 cesarean sections, an incidence of 4.5 per cent. There were, during this period, 23,214 deliveries, the incidence of cesarean section being 5.18 per cent. Three patients died after cesarean section, an incidence of 0.25 per cent. However, there were no deaths in the last 675 cesarean sections, covering a period of six years. There were no deaths following cesarean hysterectomy.

Twenty-one of the 54 patients had a temperature of 101 F. or over, exclusive of the first twenty-four hours. In 1 patient a pelvic abscess subsequently developed which was drained vaginally. This morbidity rate is less than that following cesarean section. Removal of the uterus removes the potentially infected thrombotic area of placentation, sloughing of the decidua is eliminated, involution of the uterus is eliminated and a short incision with opportunity for spontaneous drainage is substituted for the longer buried uterine incision.

Five babies were stillborn, all associated with abruptio placentae. One liveborn infant died on the second day; the mother had preeclamptic toxemia.

Less difficulty should be encountered in cesarean hysterectomy than in the usual abdominal hysterectomy because of the greater mobility of the uterus. We distinguish between "elective" cesarean hysterectomy and "nonelective." In the former, removal of the uterus is anticipated prior to its incision, while in the latter hysterectomy becomes a necessary procedure during the course of the operation. We routinely perform the typical laparotrachelotomy with longitudinal incision of the lower uterine segment. For the elective cesarean hysterectomy the procedure is identical except that after the reflected peritoneum has been freed a transverse incision in the lower uterine segment is substituted for the longitudinal incision.

The baby is delivered through this transverse incision in the lower uterine segment. The umbilical

TABLE 3.—*Incidence of Cesarean Section During the Years 1931 to 1945*

Year	Author	Institution	Period	Deliveries	Cesarean Sections	A: Incidence, %	B: Mortality, %	A Plus B	Porro Sections	Incidence, %	Mortality, %
1936	.....	Michael Reese	1933-1945	23,214	1,202	5.18	0.25	5.43	54	4.5	0
1945	Johnston, R. A.: Am. J. Obst. & Gynec. 49 : 576, 1945	Baylor Medical College (private patients)	1932-1945	5,975	392	6	2.2	8.2	7	1.9	0
1945	Irving, T. C.: Am. J. Obst. & Gynec. 50 : 660, 1945	Boston Lying-In	1934-1943	45,218	1,887	4.2	1.3	5.5	66	2.4	4.3
1945	Dieckmann, W. J.: Am. J. Obst. & Gynec. 50 : 26, 1945	Chicago Lying-In	1931-1944	30,709	1,790	4.51	0.61	5.12	96	5.36	1.04
1945	Cited by Dieckmann.....	Margaret Hague	1932-1943	68,786	1,807	2.67	1.32	4.19	27	1.47	7.40
1944	Barney, W. R.; Fish, J. S., and Riemenschneider, F. A.: Am. J. Obst. & Gynec. 48 : 733, 1944	Cleveland Maternity Hospital	1932-1942	23,306	1,444 (1,317)	6.1 ...	.... 1.5	7.9 ...	33	3	6.1
1944	Boernsohn, M.; Kushner, J. I., and Wahrsinger, P. B.: Am. J. Obst. & Gynec. 48 : 275, 1944	Bronx Hospital	1932-1942	20,763	494	2.4	3.2	5.6	9	1.8	22.2
1943	Mohler, R. W.: Am. J. Obst. & Gynec. 45 : 406, 1943	Philadelphia Lying-In	1939-1942	22,754	1,322	5.8	1.96	7.76	34	2.57	11.7
1943	Studdiford, W. H.: Am. J. Obst. & Gynec. 45 : 102, 1943	Bellevue	1937-1942	7,360	164	2.2	3.9	5.2	10	6.1	0
1942	De Normandie, R. L.: New England J. Med. 227 : 533, 1942	State of Massachusetts	1937-1941 inclusive	233,731	11,809	5.3	2.46	5.76	47	1.3	9.5
1942	Monahan and others [16].....	Johns Hopkins	1933-1941	13,494 (estimated from incidence)	750	5.2 white 5.9 Negro	1.7	7.2	85	11.3	2.3
1940	King, E. L.: Am. J. Obst. & Gynec. 40 : 860, 1940	City of New Orleans	1927-1938	92,806	1,108	1.19	5.8	6.99	39	3.5	10.3
1939	Matthews, H. B., and Acken, H. S.: Am. J. Obst. & Gynec. 38 : 937, 1939	Methodist Hospital, Brooklyn	1930-1938	27,254	1,006	3.9	3.18	7.08	10	0.94	0
1938	Lazard [17]	Cedars of Lebanon	1930-1937	6,891	571	8.28	1.9	10.18	39	6.8	2.58
				731,690	25,027	3.42	2.14	5.56	636	2.54	5.2

cord is clamped and ligated, and the placenta is allowed to remain in situ. The broad ligament and tube, together with the round ligament and the suspensory ligament of the ovary on each side, are doubly clamped and cut. A second pair of clamps catch the broad ligaments down to the level of the uterine vessels, which are readily accessible because of their upward displacement by the pregnancy. The uterine vessels are clamped and cut. The transverse uterine incision is then carried posteriorly and the amputation of the uterus is completed. The walls of the lower uterine segment are approximated by a continuous interlocking stitch. The uterine arteries are ligated separately, and the uterine ligament stumps are ligated. The peritoneum of the bladder is sutured to the peritoneum of the posterior surface of the broad ligaments and to the cervix to effect complete peritonealization.

When hysterectomy is indicated after the laparotrachelotomy with its usual longitudinal incision, the technic is the same except that amputation of the uterus is begun at the junction of the lower third and the middle third of the longitudinal incision. The lowest portion of the longitudinal uterine incision must be sutured before the transverse lower uterine edges can be approximated.

SUMMARY

A review of 731,690 deliveries as reported in the American literature for the years 1931 to 1945 establishes the incidence of cesarean section as 3.42 per cent (25,027 cesarean sections) and the maternal mortality as 2.14 per cent. Of these 25,027 cesarean sections, hysterectomy was performed in 636 instances, an incidence of 2.54 per cent, and was associated with a maternal mortality of 5.2 per cent.

In the Department of Obstetrics of Michael Reese Hospital there were 1,202 cesarean sections (an incidence of 5.18 per cent). During the years 1933 to 1945 hysterectomy was performed fifty-four times (an incidence of 4.5 per cent). The maternal mortality associated with cesarean section was 0.25 per cent, and with cesarean hysterectomy, zero.

Cesarean hysterectomy is technically not difficult. In elective cesarean hysterectomy the morbidity and mortality should not exceed that of simple hysterectomy.

The most frequent indications include pregnancy associated with fibroids, antepartum hemorrhages, uncontrollable bleeding at the time of cesarean section and intrapartum infection. Of these, the least frequent indication in our series has been intrapartum infection.

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ABSTRACT OF DISCUSSION

DR. DONALD G. TOLLEFSON, Los Angeles: Dr. Reis and Dr. DeCosta have given us an excellent summary of the history of cesarean hysterectomy. Their report indicates that the incidence of this operation has been increasing, while the literature states that it is on the decrease. Chemotherapy and extraperitoneal types of the procedure, as recommended by Waters, Cartwright and others, probably account in a large part for this decrease. Their series shows that only 1 hysterectomy was done for sterilization, while Williams gave this indication in over 25 per cent. The surest method of sterilization is hysterectomy, and the only controversies are whether the uterus has some endocrine factor and whether the psychologic factor of absence of menses is a contraindication. While one may not be justified in taking out a normal uterus, is a uterus with several scars to be considered normal? The frequency with which menorrhagia and metrorrhagia occur in the late thirties would seem to warrant the consideration of hysterectomy in this particular age group. Tubal sterilization is not technically such a simple procedure and the morbidity is often considerable, while the procedure of cesarean hysterectomy is easier than hysterectomy in the nonpregnant state. The low mortality as reported by Dr. Reis and Dr. DeCosta is commendable. I should, however, be most interested in reviewing the total maternal and fetal mortality of the entire series of over 730,000 deliveries before I am convinced that a high incidence of cesarean section is excessively dangerous or the principal cause of high maternal mortality. It is not only the operation, but also the condition for which it is done which is responsible for the mortality. It would seem proper to mention a series from Los Angeles to defend the high incidence of cesarean sections in this area referred to by the authors. In the California Lutheran Hospital during the past seventeen years, 22,068 patients were delivered with 1,692 cesarean sections, an incidence of 7.65 per cent and a mortality of 1.1 per cent. The total maternal mortality was only 0.158 per cent. In the past eleven years there were 74 cesarean hysterectomies with 1 death included in this series. At the Good Samaritan Hospital, in twenty years, Dr. Fagan has recently reviewed 14,695 deliveries, with 1,732 cesarean sections, an incidence of 11.78 per cent, with a mortality of 1.15 per cent, but the total mortality in this group was 0.19 per cent. We shall defend our position of high incidence in Southern California on a low fetal and maternal mortality.

DR. EMIL J. KRAHULIK, Los Angeles: Many patients registering for repeat cesarean section will desire sterilization. Some will present a history of menorrhagia, dysmenorrhea or other symptoms, aside from more definite anatomic pathologic conditions, such as fibroids and retroversion. These patients are candidates for future abdominal operations. When we encounter a patient who already has had tubal sterilization, she will embarrass us by wondering whether this additional trip to the hospital might not have been avoided. Cesarean hysterectomy may appear radical. Not until one realizes that one is permanently relieving the patient of some previous complaints will one be able to admit the existence of actual indications. Will extirpation of the uterus initiate a chain of symptoms resulting from artificial menopause? This point is now undergoing an evaluation. Those who have been doing cesarean hysterectomies are convinced that symptoms of even minor moment are encountered only rarely. Technically the operation is easy, and the time consumed is no greater than would be required to excise a portion of each tube and carefully peritonealize the areas. The frequency of the usual postoperative complications is smaller than usually encountered in cesarean section with or without sterilization. Dr. Reis draws attention to the high incidence of cesarean section in the Cedars of Lebanon Hospital in Los Angeles. The number of deliveries is 9,022, and the mortality is 9, or 1 per thousand. Included in the 9,000 are 807 cesarean sections, or an incidence of 9.6 per cent. There were no deaths in the cesarean group. Sixty-seven were cesarean hysterectomies. Eight were done as definite emergencies encountered during the operation, while 59 were planned-for hysterectomies. This report is from a private hospital, staffed almost entirely by board members, and neglected or mismanaged cases are rare. In the Los Angeles County General Hospital, the patients have not always availed themselves of complete antepartum care and advice. The hospital also receives the neglected and mismanaged cases from the entire county. During the past ten years, there were 32,790 deliveries, including 1,092 cesarean sections, an incidence of 3.32 per cent. One hundred twenty-five were cesarean hysterectomies, 20 were done as emergencies and 105 previously planned. Many of these were bad risks to begin with, and 3 died.

DR. RALPH A. REIS, Chicago: For the benefit of the audience, who may not know that the Civil War is over, I should say this is not a regional fight between Chicago and Los Angeles. The provocative sentence is as follows: "This leads to the observation that the sum of the incidence percentage and the mortality percentage gives a fairly constant figure which can be expressed mathematically as 6 plus or minus 2. The only real exception to this constant comes from Los Angeles, where the reported incidence of cesarean section seems too high." With that in mind, when the Secretary of the Section asked me whether I had any choice as to discussants,

I picked our friends from Los Angeles, who have just spoken, not that I wanted them to defend themselves, but because I did want them to have an opportunity to hit back before this got into print. I do feel, and we all feel at Michael Reese Hospital, that when a woman is under 35, her uterus should be saved if possible; that unless there is an inherent pathologic condition of the uterus, there is no need, for carrying out a cesarean hysterectomy just for the purpose of sterilization. We do not do, and never have done in the last twenty-five years, cornual resections of any type. We do a simple "crush and ligature" which takes about thirty seconds for each tube. We do not feel that the uterus which is scarred by a lower uterine segment incision is a bad uterus, because when the lower uterine segment disappears after pregnancy, the scar disappears with it. It was impossible to do as Dr. Tollefson would have liked, and as he asked us to do, that is, to try to analyze mortality figures from the papers out of which we arrived at these 730,000 deliveries. It is almost impossible to take from the printed page any type of evaluation of the pros and cons of one procedure versus another. All we can do in the aggregate series is to give them to you as we found them and as we added them up on our adding machine.

PSYCHONEUROSIS, ITS SIGNIFICANCE IN GENERAL PRACTICE

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Factors in everyday life which resulted from the problems of war and now social, economic and personal unrest have led to a definite increase in individual emotional and psychologic difficulties. Even before the war studies in some general hospitals demonstrated the fact that a large percentage of patients had no physical basis for their symptoms. Surveys carried out in the military service have substantiated these observations. A large percentage, actually nearly three quarters, of the men rejected because of psychiatric difficulties by Selective Service were rejected for psychoneurosis. This is evidence of a tremendous amount of emotional maladjustment in a selected group of the population.

Contemporary papers on the subject indicate that at least one half of all patients have their symptoms as a result of emotional difficulties or that there is a sufficient overlay of emotional symptoms in addition to and as a part of the physical disease to warrant psychiatric understanding and treatment. When one considers that only about 2 per cent of the registered physicians in this country are trained in psychiatric procedures, it becomes obvious that these patients cannot be taken care of by psychiatrists. Therefore it is essential that every physician, whether he is in general practice or in a specialty, obtain some understanding of psychiatric principles and utilize these principles in the treatment of all his patients. The patient must be considered as a person who is ill and who has certain physical and emotional reactions to that illness, not just as a disease entity with no consideration of his way of thinking or feeling. "Here is a group of patients in which it is not the disease but the man or woman who needs to be treated . . ." (Francis W. Peabody [1]).

Problems involving the emotional and psychologic life of the patient can obviously be extremely mild or extremely serious, just as physical manifestations may vary in severity. The physician in general practice meets and treats all kinds of patient problems and this is, or should be, just as true of emotional illnesses or psychoneuroses as it is of any other type of illness. Clear understanding of the meaning of such symptoms and early proper treatment may prevent the development of serious manifestations.

No matter what the disease process, the person must have some sort of emotional reaction to his disorder if he is able to think or feel at all. Some approach illness in an apparently matter-of-fact manner, while others are extremely anxious, tense and disturbed over the possible seriousness of their condition. The person who must prove physical capacity to himself may find his emotional economy dangerously threatened by physical disease. On the other hand, the person who has reached the limits of his physical and emotional tolerance may welcome a physical disease as a means of relief from stress. Every patient will respond more promptly to treatment of any disease if the physician understands and adequately handles the emotional as well as the physical aspect of the illness.

A large percentage of patients who are sick have no physical cause for their illness, and yet the complaints and not infrequently the manifestations are of an organic nature. The physician who is satisfactorily practicing his calling must be aware of these possibilities and accept the challenge of carrying out a total treatment program. Unless the emotional problem is sufficiently complicated to require the service of a specialist, the physician who first sees the patient is the one who should treat the milder neuroses, which are characterized by anxiety, hysterical or conversion symptoms. Symptoms may simulate those of a relative with whom the patient identifies himself or toward whom he feels guilt. Sometimes the symptom is symbolic, such as the asthenia of the woman who wants to be cared for like a child, or the vomiting of a patient who rejects his sexual drives. Through psychogenic symptoms the patient often seeks to escape from an intolerable situation or to effect a compromise solution of an unconscious conflict.

During the past few years ever increasing attention has been paid to psychosomatic disorders. In a way the term seems unfortunate since it implies psychic and somatic difficulties rather than one disease process made up of thoroughly integrated psychologic, emotional and physical factors. Any bodily system may be involved with symptoms characteristic of dysfunction of the part, such as gastric ulcer, thyroid disease or hypertension. The specific localization and type of symptom in psychosomatic diseases is undoubtedly determined in part by constitutional factors such as a predisposition to allergic, vasomotor, cutaneous or other symptomatic disturbances, in part by accidental factors but largely by the experimental background and the type of stress affecting the person. Some interesting confirmatory manifestations occur in the course of psychotherapy. For example, a patient being treated by a dermatologist for excessive sweating of the hands and for psoriasis was referred for treatment of his emotional difficulties. During the course of treatment, when problems of strong emotional value were discussed his psoriasis would become much more pronounced. As the reaction to these emotional problems disappeared, the psoriasis improved and the excessive sweating dis-

Read before the Section on General Practice of Medicine at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 4, 1946.

1. Peabody, F. W.: Doctor and Patient: Papers on the Relationship of the Physician to Men and Institutions, New York, The Macmillan Company, 1930.

appeared. Treatment of the emotional factors resulted in progressive improvement, although local treatment had been of little value. A patient with an unquestioned diagnosis of polycythemia vera showed variations in symptomatology during treatment which were difficult to explain on the basis of physical factors but were easily understood on an emotional basis. Many of his symptoms, which have been described as manifestations of polycythemia, had existed long before a diagnosis of this disease had been made and unquestionably were related to emotional factors. These improved when the emotional conflicts were resolved.

Common is the exaggeration of symptoms of a physical illness or a prolongation of the manifestations of physical illness on the basis of emotional needs of the person. The patient who has influenza followed by asthenia may by improper supervision or recommendations for rest from his physician have these symptoms continued over a much longer than necessary period of time. The patient is already conditioned to fatigue from physical factors. The infection or disease process produces a locus minoris resistentiae, and when unneeded rest or a vacation is prescribed the patient has a socially acceptable reason for a continued manifestation of symptoms. The result is an easier but decidedly unhealthy way for the patient to meet his life's problems.

Adequate rest is essential in certain diseases, but, as Menninger [2] has pointed out, unnecessary rest is harmful. I am convinced that more patients with cardiac disease are killed by the anxiety and emotional reactions stimulated by the physician who wants to insure adequate rest than by the disease process itself. One striking example of this sort comes to mind. A relatively young man who had an unquestioned coronary thrombosis, with electrocardiographic evidence of significant involvement of the cardiac musculature, was told by his physician that he must have many weeks of complete rest in bed. The danger of activity was overemphasized by this warning. After a few weeks he began to be depressed and was referred to a psychiatrist, who, recognizing the danger of the emotional reaction, began to get the patient up gradually. The emotional problems which had really precipitated his cardiac difficulty were resolved and in due course, in less than two years, as a matter of fact, the patient was again carrying on full activity. This was some six or eight years ago, and recently he has gone deer hunting.

The list of psychosomatic disease processes which have significant emotional factors is long and steadily growing. There is real danger in such patients that ill conceived and unwisely administered physical, medical or surgical treatment will lead to an intensification of the patient's symptoms.

Practical means of making the diagnosis and planning treatment must be available to the general practitioner and to specialists in fields other than psychiatry. It is hoped that some of the following suggestions may be of value. The physician should show interest in and obtain information about the patient other than that related to the immediate complaint. Of particular value is the description of the patient's adjustment to his immediate associates, especially the family. An adequate history, properly taken, is an important step in the treatment process. The physical studies indicated by the patient's symptoms must be thoroughly performed. They should be sufficiently comprehensive to enable the examining physician to determine the physical status of the patient but should be conducted in such a manner that the anxiety of the patient is not increased. Frequently extensive examination procedures are interpreted as evidence of serious physical disease. The steps in making a positive diagnosis of an emotional disorder or tension state should begin at the first contact with the patient and should accompany other procedures. The diagnosis of emotional factors in illness under no circumstances should be made by exclusion. Too much emphasis cannot be placed on the establishment of a satisfactory personal relationship between the physician and patient. This should be neither too friendly nor too reserved but a happy compromise, which will gain for the physician the proper degree of respect from the patient.

The patient needs to know a great deal about his own personal views and prejudices. It is difficult to understand the problems of others unless one has some understanding of one's self. The physician's emotional bias must not be allowed to influence his attitude toward the patient. Constant attempts to understand the patient's point of view are necessary, and no matter what material may come out of the interview, the examiner should neither criticize nor for that matter approve of any activity which the patient may describe which has been the source of conflict. Under no circumstances should the physician assume an attitude of superiority or should the patient get the idea that the physician does not have time to listen to the patient's story. On the other hand, it is necessary to keep the patient on the subject and to prevent him from speaking at length about matters which have no significance in regard to the patient's difficulty. Significant statements may be made without warning and should be watched for continually. Interestingly enough, patients often will preface a particularly important comment by the statement, "This isn't important and I shouldn't waste your time about it." In the treatment procedure it is important to realize that the patient may have to discuss early conflictual situations which may have become transferred to contemporary persons or to contemporary environmental situations. This may appear to be a time-consuming process but actually is less so for the patient and certainly less expensive and less traumatic than a whole series of irrelevant and unimportant physical diagnostic procedures.

When the diagnosis of an emotional disorder has been established and the physical factors are found to be unimportant or not present, or have been satisfactorily treated, the danger of having a "nothing wrong attitude" must be kept in mind. To tell a patient that he has a "nervous stomach" or "nervous exhaustion" is extremely harmful. It gives the patient a handle to which he may attach his symptoms and tends to make him persist in retaining such symptoms.

The reeducation of the patient in the principles of mental and physical health, at the same time giving him some understanding of the means by which his symptoms may occur, is of importance. Interpretation of the symptoms to the patient is of value, but care should be exercised in this regard. Seldom should more than tentative interpretations and correlations be

2. Menninger, K. A.: The Abuse of Rest in Psychiatry, Bull. of the Menninger Clinic 9:162 (Sept.) 1945.

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made. An approach such as "Do you think this might be bothering you?" may lay the groundwork for adequate understanding on the part of the patient of his difficulty. Not only the patient but his family should have adequate insight. The patient must understand that he is not being accused of putting on or of imagining his difficulty. He must realize that the symptoms are just as real and as significant, if not more so, as they would be if due to some physical process. If the patient's symptoms even in part are consciously motivated, it must be realized that there is a reason for it; in this field, as in all others, there is no effect without a cause. Almost more important than having the patient understand these factors is the necessity of understanding and acceptance on the part of the patient's family. Criticism, ridicule and jests tend to increase symptoms rather than to relieve them. Such procedures should never be a part of the approach of either the physician or the family.

As mentioned earlier, rest is much abused. Great harm can be done by the prescription of unneeded rest. Too much emphasis on this factor tends to convince the patient that he does have a physical basis for his symptoms, and since most of these patients would much rather blame their symptoms on a physical process such emphasis gives them just the opportunity that they constantly desire. It is more painful to face the issue but likewise far more healthful. Excellent practical recommendations for the understanding and treating of these patients is to be found in a technical bulletin issued by the United States War Department [3] and in a recent article by Rennie [4] in the *Bulletin of the New York Academy of Medicine* for January 1946.

Recognition of the importance of emotional factors in illness, a willingness to spend more time with such patients, an understanding of some of the motivating factors in such conditions and the ability to help in the solution of such problems is an essential characteristic of every good physician.

As a concluding remark, I should like to quote from that great physician, Sir William Osler. "The practice of medicine is an art, not a trade; a calling, not a business; a calling in which your heart will be exercised equally with your head. Often the best part of your work will have nothing to do with potions and powders but with the exercise of an influence of the strong upon the weak, the righteous upon the wicked, of the wise upon the foolish."

ABSTRACT OF DISCUSSION

DR. KARL M. BOWMAN, San Francisco: I agree with everything Dr. Waggoner has said. I would like to bring up three additional points. First: Psychoneuroses are usually seen first by physicians from other fields of medicine than psychiatry. It is most important, therefore, that every physician have some understanding of these conditions and be prepared to deal with them. He should not dismiss such a patient by telling him that he is just imagining things and that there is nothing the matter with him. The physician should be prepared to treat the patient by reassuring him and starting him on the road to recovery. While it is not to be expected that physicians in general will become expert psychiatrists, they should have enough understanding of the subject to make a preliminary diagnosis and to see that the patient is referred to one from whom he can secure appropriate treatment. Second: It is important to remember that one is treating a person who is sick, and that the personality of this patient may be as important a factor in determining recovery as the sickness itself. To some persons sickness represents either a way to escape responsibilities or unpleasant tasks or a means of dominating or punishing others. It may also be a way of getting prestige or money, and every one is familiar with the difficulty in treating patients whose illness represents a financial gain. The method of examining a patient suspected of being psychoneurotic is of the greatest importance. The manner in which a physical examination is performed may either reassure and help toward cure or may terrify the patient and convince him that he has a serious disorder, thus making treatment more difficult. Third: It should be emphasized that no two persons are exactly alike and that the methods of approach, of study and of treatment that work with one patient will not work with another. This personality factor must be dealt with in all cases of sickness, whether mental or physical, and this cannot be done adequately by stereotyped methods.

GEN. EUGEN I. G. REINARTZ, United States Army: I should like to stress the importance of a paper such as Dr. Waggoner's to the general practitioner. There are some who do not take proper cognizance of the extremely important psychologic aspect of the patient who comes to them. The physician must think of a patient as a whole, not as one who presents certain symptoms. It has been my good fortune to have been Commandant of the School of Aviation Medicine where more than five thousand outstanding physicians have come for instruction and graduation. The courses in neuropsychiatry were the most popular of the entire curriculum. I am glad to say that this has added to the 2 per cent which Dr. Waggoner mentioned as the number of physicians psychiatrically motivated. This will be a happy leaven in the medical population of the United States as a whole.

DR. JOHN Z. BROWN, Salt Lake City: For a number of years I have been concerned about my lack of training in this field, and I want to compliment Dr. Waggoner for calling attention to this great problem. I hope that this section will have more papers like this. When I was a student Dr. Sippy always said "Be sure to make a distinction if you can as to whether this problem is functional or anatomic." I have had as patients within the last eighteen months 6 young men with these symptoms who have come home from the government service. I think Colonel Chamberlain, who has charge of the psychiatric division at the Bushnell Military Hospital at Brigham City, Utah, is vitally interested in this problem. Dr. Waggoner appreciates the fact that so many of these questions which are dismissed as trivial really are not trivial. The number of young men who have been in the service and whom the Army is trying to rehabilitate is legion, says Colonel Chamberlain. The point I want to emphasize is that this problem is going to be met by general practitioners more frequently than it has in the past.

DR. RAYMOND W. WAGGONER, Ann Arbor, Mich.: The question raised by Dr. Bowman, that of the time involved in handling patients with neuropsychiatric difficulties, should be emphasized. I am much impressed with the need for taking a little more time in order to give the patient that extra understanding that may relieve him of his tension and allow him to take his place again in society without the manifestation of these symptoms. It is gratifying to know that in the early phase of a difficulty of this sort a short period of discussion by an understanding physician may relieve the patient of most of such symptoms. I cannot emphasize too much the fact that physical manifestations may frequently be the result of psychologic or emotional factors. Dr. Brown's reference to the boy who came to him and said, "Am I a nut?" raises a very important problem. Some doctors belittle a patient who has a gastrointestinal disturbance on a functional basis. These illnesses are just as real and oftentimes far more significant to the patient than a physical illness. Anyone has the possibility of developing an emotional disorder if the stress to which one is subjected in everyday life is sufficiently heavy.

3. Neuropsychiatry for General Medical Officer, United States War Department, Technical Bulletin (TB Med 94), Washington, D. C., Government Printing Office, Sept. 21, 1944.
4. Rennie, T. A. C.: What Can the Practitioner Do in Treating the Neuroses? Bull. New York Acad. Med. 22:1 23-37 (Jan.) 1946.

Clinical Notes, Suggestions and New Instruments

DERMATITIS OCCURRING DURING THERAPY WITH TRIPELENNAMINE HYDROCHLORIDE ("PYRIBENZAMINE HYDROCHLORIDE")

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It has been discovered that most of the so-called "miracle drugs" introduced during the past few decades have had the potentiality of causing cutaneous reactions. The dermatoses resulting from the therapeutic application of the trivalent arsenobenzols, penicillin, the sulfonamide compounds and dinitrophenol, have limited the usefulness of these agents. However, to date there have been no reports of dermatoses due to the antihistamine drugs, such as diphenhydramine hydrochloride ("Benadryl hydrochloride" N. N. R.) and tripelennamine hydrochloride ("pyribenzamine hydrochloride" N. N. R.).[1] Therefore the 2 following cases are reported.

REPORT OF CASES

CASE 1.—K. S., a white man aged 28, had suffered with atopic eczema since infancy. On examination on July 7, 1946 the patient presented an erythematous, pigmented, lichenified dermatitis involving the face, the neck and the flexures of the arms and legs. Treatment with diphenhydramine hydrochloride was attempted. An oral dose of 50 mg. of the drug three times a day was prescribed but was discontinued after the first day because of the patient's weakness. On September 4 tripelennamine hydrochloride was recommended in the same dosage. Within twelve hours after the ingestion of the first tablet, the patient noted the development of a smooth, erythematous, macular, oval eruption on his trunk and extremities. The dermatitis followed the lines of cleavage of the body. The distribution suggested that of pityriasis rosea. The patient was not seen until two weeks later. During this time he continued to take the drug and the condition continued to spread. On examination on September 20, the lesions were considered to represent an atypical example of pityriasis rosea. However, the medicament was discontinued and the eruption slowly subsided over a period of three weeks. On November 15 the drug was again taken. The eruption recurred eight hours after the patient consumed the first tablet. Tripelennamine therapy was immediately discontinued, and the eruption disappeared in ten days.

CASE 2.—P. H., a white man aged 42, had been afflicted with a severe form of eczema for many years. On examination he presented a dry, pigmented, lichenified, erythematous, pruritic eruption involving his ears, neck, arms and legs. Tripelennamine hydrochloride was prescribed on Nov. 29, 1946. Within ten hours after taking the first 50 mg. tablet, the patient noted a rapidly spreading, generalized, erythematopapular eruption not unlike the original eczematoid dermatitis. It was considered that this probably represented an extension of the eczema. However, the patient then offered the information that another physician had given him this drug two months before. The ingestion of one tablet had caused an immediate generalized eruption of the same type. The extension subsided in about two weeks, leaving the lesions for which the patient originally sought treatment unchanged.

COMMENT

Clinically, the 2 eruptions were dissimilar. The first mimicked pityriasis rosea, while the appearance of the second suggested an extension of the patient's eczema. However, many drugs, including the arsenobenzols, gold salts and quinacrine hydrochloride, can cause similar dermatoses. In both instances, tripelennamine hydrochloride was incriminated by the following criteria: development of the lesions while the patient was taking the compound, reasonably quick clearing with discontinuance of the drug and immediate recurrence on its readministration.

In both instances the presenting dermatitis was atopic eczema. However, a series of 2 cases is insufficient to support speculation as to the relationship of dermatitis due to this drug with atopic eczema. The fact that its use may cause an eczematoid eruption in susceptible persons is of interest in view of the theory which links eczematoid eruptions with the release of histamine.

SUMMARY

Eruptions developed in 2 patients with atopic eczema while they were taking tripelennamine hydrochloride ("pyribenzamine hydrochloride" N. N. R.). One eruption was of the eczematoid type, the other resembled pityriasis rosea. Both cleared with discontinuance of the drug and recurred on its readministration.

1. Feinberg, S. M.: Histamine and Antihistaminic Agents: Their Experimental and Therapeutic Status, J. A. M. A. 132:702 (Nov. 23) 1946.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following report. HOWARD A. CARTER, *Secretary.*

EMERSON RESUSCITATOR, MILITARY MODEL, ACCEPTABLE

Manufacturer: J. H. Emerson Company, 22 Cottage Park Avenue, Cambridge, Mass.

The Emerson Resuscitator, Military Model, is designed to furnish mechanical artificial respiration to victims of asphyxia. It is operated by compressed air. A foot pump compresses the air. The resuscitator can also be operated by compressed oxygen.

The apparatus is housed in a sturdy fiberboard carrying case measuring 24 by 16 by 6 inches (60.9 by 40.6 by 15.2 cm.) which, with its contents, weighs 36 pounds (16.3 Kg.).

The air compressor is a compact unit made of heavy enameled sheet metal measuring 18½ by 5½ by 5 inches (47.0 by 14.0 by 12.7 cm.) and weighing 10 pounds (4.53 Kg.). The air pump, which has a bore of 3 inches (7.6 cm.), a stroke of 5½ inches (14 cm.) and a volume of approximately 500 cc. for each stroke, is attached to the flat hollow base, which functions as the storage tank for compressed air. When not in use the foot pedal folds compactly over the pump. At the end of the base opposite the pivot of the pedal two valve outlets with a gage for attaching the mechanism of the resuscitator are provided.

The mechanism of the resuscitator is encased in an enameled sheet metal cylinder 4 inches (10.2 cm.) in diameter and 2¾ inches tall (7.0 cm.) and weighs about 2 pounds (0.9 Kg.).

Two types of equipment are available. One model is a resuscitator only; the other has an additional valve which converts it into an inhalator. A transparent plastic face mask with an inflatable rubber cuff is attached directly to the mechanism of the resuscitator. A fabric-reinforced rubber tube 4½ feet (114.3 cm.) long connects the apparatus to the source of compressed gas.

The working parts are similar to those of the hospital model of the Emerson Resuscitator, which is accepted by the Council and is described in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 30, 1942, page 44. The positive and negative pressure is created by the compressed gas acting on the valve mechanism of the resuscitator. According to the manufacturer the positive cycle has a pressure of + 14 mm. and the negative cycle a pressure of — 9 mm. of mercury in the face piece. The investigation of the Council substantiated these values to an accuracy of 2 to 3 mm. of mercury. Fluids and mucus may be removed from the respiratory passages with a large rubber catheter inserted into the trachea or pharynx. Suction is obtained by a venturi valve, which is connected with one of the outlets of the air chamber of the compressor pump through an aspirator bottle.

In this type of apparatus the respiratory rate is dependent on two factors: (1) the volume of gas which is necessary to create an intrapulmonary pressure sufficient to trip the valve and thereby initiate the negative phase and (2) the rate at which the gas flows into the respiratory system. The former is determined by the capacity of the lungs and air passages and is

subject to individual anatomic variation. The latter is fixed at the factory by adjustments in the mechanism and cannot be changed by the operator. The respiratory rates obtained with this device are therefore determined by the capacity of the thorax of the individual on whom it is used.

When a rubber bag of 1,600 cc. was used to test the resuscitators a rate of 5 cycles per minute for apparatus under test was obtained and 8 cycles per minute in the other, while the resuscitator-inhalator operated at the rate of 10 cycles per minute. By reducing the capacity of the bag to 500 cc. the rates were increased to 10, 16 and 24 per minute respectively. The high rate of the resuscitator-inhalator was accompanied with low pressures within the bag and was due to an irregular fluttering of the valve mechanism.

When the resuscitator is operated by the foot pump, from 15 to 25 strokes per minute are required. The resuscitator-inhalator requires 40 to 45 strokes per minute. Both resuscitators can be operated, that is, two patients treated, simultaneously. This requires 35 to 40 strokes of the pump per minute, while operation of the resuscitator-inhalator and a resuscitator requires 60 strokes per minute.

With the pressure in the air chamber of the pump at an optimum for continuous operation of the resuscitator, approximately 70 foot pounds of work is needed to complete one stroke of the pump in slightly less than three seconds. At this rate 42,000 foot pounds is required to operate the resuscitator for thirty minutes.

Seven men in average physical condition operated the pump, with one resuscitator attached, for periods ranging from twenty to forty-five minutes. None were unduly fatigued, and each felt that he could have continued the work for a considerably longer period. One man was able to maintain adequate pressure to operate two resuscitators for thirty minutes without excessive fatigue. The pump was operated from a kneeling position, with both hands on the free end of the foot pedal, which allows the maximum use of the body weight and requires a minimum of muscular effort.

Emerson Resuscitator, Military Model.

Effective resuscitation using the foot pump requires two operators: one to maintain air pressure in the system and another to keep the face piece in close contact with the face to prevent escape of air, which interferes materially with the proper functioning of the resuscitator. The weight of the resuscitator mechanism (2 pounds or 907 Gm.) renders strapping to the face impracticable.

The resuscitator under investigation operated in the manner described when compressed oxygen is used. This combination can be used in operating room emergencies when the patient is in a supine position and there are no contraindications to the use of a positive pressure device.

If the apparatus is in readiness, resuscitation can be instituted within a few seconds by a person trained to use it. Clinical evidence of the efficacy and safety of this apparatus has been submitted by the firm.

The Council accepts resuscitators when critical evidence is received. The J. H. Emerson Company has submitted satisfactory information to substantiate the efficacy of this device when used in operating rooms and in medical institutions. Evidence has not been received indicating that the Emerson Resuscitator, Military Model, has been successfully employed by military personnel, firemen, policemen or rescue teams. The acceptance for the resuscitator in question is limited to its use in operating rooms and in medical institutions.

The Council on Physical Medicine voted to adopt the Emerson Resuscitator, Military Model, for inclusion in its list of accepted devices for use by physicians and adequately trained personnel who are familiar with the proper procedures to be followed in resuscitation as well as with the limitations and hazards of positive pressure, provided the advertising and descriptive matter contain the aforementioned limitations for its uses.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

PENICILLIN (See New and Nonofficial Remedies, 1946, p. 212).

The following dosage forms have been accepted:

BRISTOL LABORATORIES, INC., NEW YORK

Crystalline Penicillin Sodium: 20 cc. vials containing 100,000 units, 200,000 units or 500,000 units and in combination packages containing a vial of penicillin sodium and a 20 cc. vial of isotonic salt solution.

MERCK & CO., INC., RAHWAY, N. J.

Crystalline Sodium Penicillin-G: 100,000 unit, 200,000 unit and 500,000 unit vials.

PREMO PHARMACEUTICAL LABORATORIES, INC., NEW YORK

Crystalline Sodium Penicillin-G: 20 cc. vials containing 100,000 units or 200,000 units.

E. R. SQUIBB & SONS, NEW YORK

Crystalline Sodium Penicillin-G with Buffer: 100,000 unit and 200,000 unit vials. Buffered with sodium citrate.

WYETH INCORPORATED, PHILADELPHIA

Penicillin Sodium: 200,000 unit and 500,000 unit vials.

CONTRACEPTIVE CAPSULES AND SUPPOSITORIES (See New and Nonofficial Remedies, 1946, p. 359).

The following article now stands accepted:

EATON LABORATORIES, NORWICH, N. J.

Lorophyn Vaginal Suppositories: Suppositories consist of a low melting mass prepared from the formula:

Phenylmercuric acetate	0.05%
Glyceryl mono-laurate	10.00%
Tween 61 (Sorbitan monostearate-hydroxy polyoxyethylene ether)	89.95%

Actions and Uses.—See article Contraceptive Capsules and Suppositories.

Dosage.—One suppository containing 2.85 Gm.

ESTROGENIC SUBSTANCES (See New and Nonofficial Remedies, 1946, p. 443).

The following dosage forms have been accepted:

ENDO PRODUCTS, INC., RICHMOND HILL, N. Y.

Tablets Estromone: 1,000 international units, 2,000 international units and 4,000 international units.

Solution Estromone (in Oil): 1 cc. ampuls and 10 cc. and 25 cc. vials. Each cubic centimeter contains 2,000 international units, 5,000 international units, 10,000 international units or 20,000 international units of estrogenic substances in sesame oil. The 10 cc. and 25 cc. vials contain 0.5 per cent chlorobutanol as preservative.

U. S. trademark 345,724.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1946, p. 618).

The following dosage forms have been accepted:

E. S. MILLER LABORATORIES, INC., LOS ANGELES

Solution Thiamine Hydrochloride 10 mg. per cc.: 1 cc. ampuls.

Solution Thiamine Hydrochloride 50 mg. per cc.: 1 cc. ampuls.

BACTERIAL VACCINE MADE FROM PLAGUE BACILLI (See New and Nonofficial Remedies, 1946, p. 577).

The following dosage form has been accepted:

CUTTER LABORATORIES, BERKELEY, CALIF.

Plague Vaccine: 20 cc. vials containing 2,000 million killed bacilli.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 28, 1947

POLIOMYELITIS VIRUS IN NERVOUS TISSUE

Bodian and Cumberland[1] report a study of the changes of virus titer in infected nervous tissue in all stages of the disease. The Lansing strain of poliomyelitis virus was used to permit an adequate titration of virus samples in mice. The virus levels in the spinal cord throughout the course of infection were studied in rhesus monkeys inoculated intracerebrally with Lansing virus, although another strain, avirulent in mice, was used for comparison of the time of persistence of virus in the recovery period. Spinal cord enlargements, including segments from the fifth cervical to the first thoracic and the fourth lumbar to the first sacral inclusive, were removed and split into right and left halves. Each half was then split into dorsal and ventral halves. Thus the cord suspensions prepared from the ventral quadrants contained all the neurons responsible for the muscle function of each limb. Virus levels were studied in the ventral quadrants of the cervical and lumbar enlargements of the spinal cord separately, so that correlation with the degree of paralysis could be made if possible. The authors made use of an unusual feature of the disease in monkeys, which is the initial paralysis of the arms in 75 per cent of cases followed by leg paralysis in the course of about twenty-four hours. This lag in leg paralysis is paralleled by a later onset of virus proliferation in the lumbar cord as compared with the cervical cord.

Intracerebral inoculation in monkeys is followed by a latent period of an average duration of seven days. During this period lesions or proliferated virus cannot be detected in the central nervous system. Signs of an active disease process begin with an early preparalytic period lasting about one day and characterized by early lesions in the brain which extend down the brain stem to the level of the upper spinal cord. Fever may or may not develop during this period. Virus cannot be detected in arm or leg segments of the cord as yet. A prodromal, late preparalytic period with an average duration of about one day follows and is characterized by increase of intensity of cerebral lesions and by consequent clinical signs of fever, generalized muscle spasticity and tremor. Lesions and high concentrations of virus are now found in the arm segments of the spinal cord, but virus and lesions may or may not become apparent in the lumbar cord at this stage. This sequence of events, according to the authors, is characteristic of Lansing virus infection in monkeys.

The authors expected to find a correlation between severity of paralysis and heights of virus titer. They found, however, that peak concentrations of virus could be reached within one day of the onset of the pathologic process and before clinically evident paralysis occurred. At this time, although some cells are really destroyed by virus action, most affected cells are apparently in various stages of chromatolysis. Probably peak concentrations of virus are achieved in such cells before their function is lost. By the time paralysis first appears, many motoneurons are severely injured or destroyed, neuronophagia is common and maximal concentrations of virus may still be obtained. The appearance of much neuronophagia at a time when high concentrations of virus occur suggested that the infectivity of the tissue is directly proportional to the amount of neuronophagia. This proportionality is incidental and is not directly related to the dynamics of virus multiplication and is true only in the earliest stages of the pathologic process. Soon thereafter the virus titer may drop precipitately, but neuronophagia may still be present in considerable amount and paralysis may even increase as injured cells continue to die.

These studies then reveal that peak concentrations of virus are achieved within one day after the virus is first demonstrated, and maximal concentrations are maintained for an average period of two days. These two days are the day preceding paralysis of the limb corresponding to spinal cord segment and the first day of paralysis. A sharp dampening effect on virus multiplication occurs on about the second day of paralysis. On the third day most cord segments have virus concentrations below the mouse infectivity threshold. Virus, however, can subsequently be detected for at least two weeks by subinoculation in rhesus monkeys. Since peak concentrations of virus may occur during the early stages of pathologic change, before sufficient motoneurons are destroyed or so injured that clinically evident paralysis occurs, and since virus levels decrease after the first day of paralysis, correlations of virus titer and severity of paralysis cannot be adequately made. The stage of the disease during which a sample of virus was obtained appeared to be without influence on the incubation period in animals inoculated with that sample.

These studies throw considerable light on the dynamics of poliomyelitis infection and likewise contain implications with regard to the possibilities of chemoprophylaxis and chemotherapy.

1. Bodian, David, and Cumberland, Mary C.: The Rise and Decline of Poliomyelitis Virus Levels in Infected Nervous Tissue, Am. J. Hyg. 45: 226 (March) 1947.

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THE SUPPLY OF DOCTORS

Recently a national periodical—*Collier's*—published a misleading article by Albert Maisel entitled "So You Can't Get a Doctor!" This long and somewhat confused statement purports to demonstrate that there is an acute shortage of doctors in this country and that deans of medical schools are callous to this alleged need, as shown by termination of the accelerated program in most schools and the reduction in freshmen enrolments to prewar levels.

Much of the material in this article is sheer nonsense. The author begins with a partial quotation from a publication of the American Medical Association, taken out of its context, predicting a postwar shortage of doctors. Actually this estimate was made when the end of the war seemed far distant and the military authorities were refusing to allow able bodied men to enter premedical studies. The figures quoted were based on military estimates of the physician need for a large peacetime army and navy, universal military training and a staff for the Veterans Administration three times the number now actually employed. Only a fraction of the anticipated number of physicians is now employed in these services.

While contending that maldistribution of doctors is not the major factor in the alleged shortage, Maisel selects as outstanding examples of shortages two states with per capita incomes well below the national average, and—of all places—Kelley's Island, 4 miles out in Lake Erie! The evidence for shortages even in large cities is based on replies to telegrams asking whether there exists in large cities a "surplus of physicians available for transfer elsewhere . . ." No wonder negative replies were received from fifteen cities. Even where a surplus might exist, physicians are not "available for transfer" to a place to which they do not choose to go any more than are engineers or day laborers.

Whether or not there is a real shortage of doctors requires a far more careful study than the mere sending of a few telegrams. Such studies are under way in several states and in the country at large. The population of physicians in this country has increased somewhat more rapidly than the population at large in the past twenty years. Whether or not there is a real total shortage, some maldistribution prevails and redistribution is extremely difficult in a democracy. Men are free to work in a place where there are facilities for good work, such as hospitals and diagnostic equipment, stimulating professional and educational contacts and reasonably good family living conditions, and where a reasonably good income is possible.

There is close correlation between the per capita income of states or counties and the numbers of physicians who locate in any area. Such location is insignificantly affected by establishing more medical schools, increasing enrolments or accelerating the curriculum. More promising are the efforts now being made: the provision of hospital and diagnostic facilities under the Hospital Survey and Construction Act, the extension of prepaid medical care insurance, the strengthening of the status of the general practitioner, the information service on areas needing physicians, the intimate liaison of organized medicine with farm organizations, and similar considerations.

The reason for the cessation of acceleration and the return to prewar enrolment numbers is simple: medical educators were not doing as good a job of training physicians during the war as is now desired. More than 7,000 extra doctors were produced during the war. This was necessary. In many schools, facilities and strength of faculty now do not warrant maintenance of large enrolments or an accelerated program, without a serious sacrifice of high quality. Numbers can never replace quality, especially in medicine. On these questions there is virtually unanimous agreement among medical educators, deans, faculty members, the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association.

BIOGENESIS OF THE STEROIDS

In the animal the steroids are important. The bile acids, the estrogens, the androgens, the adrenal cortical hormones, the cardiac glycosides, cholesterol and the 17 ketosteroids are all lipids. These substances are intimately interrelated, differing primarily in the type and position of their nuclear substituents. After the isolation of cholesterol by Poulletier in 1769 the origin of this substance and its possible position as the precursor of these alicyclic compounds invoked much investigation.

The endogenous nature of cholesterol was demonstrated in 1925.[1] These results were confirmed;[2] further it was shown that plant sterols, by virtue of their nonabsorbability, do not contribute toward synthesis of cholesterol. Many controversial claims have been made relative to the site of cholesterol formation, with the spleen, adrenals, liver and gonads occupying predominant positions; nevertheless the site of formation of cholesterol is still unknown.

Many studies have been made on the possible precursors of this steroid, and several suggested precursors such as oleic acid, squalene and carbohydrates have been considered. Recently it has been conclusively shown [3] that cholesterol is synthesized in the animal from small molecules such as water and acetic acid.

The predominant question in the biogenesis of the steroids is whether cholesterol serves as the parent compound or whether these substances are synthesized

1. Channon, Harold John: Biochem. J. **19**: 424, 1925. Randles, F. S., and Knudson, Arthur: J. Biol. Chem. **66**: 459 (Dec.) 1925.
2. Schoenheimer, Rudolf, and Breusch, Fritz: J. Biol. Chem. **103**: 439 (Dec.) 1933. Breusch, F. L., ibid. **134**: 151 (June) 1938.
3. Bloch, Konrad, and Rittenberg, D.: J. Biol. Chem. **145**: 625 (Oct.) 1942.

de novo. It has been suggested [4] that cholesterol, after oxidative degradation, serves as the precursor to the steroid sex hormones. In 1943 the in vivo conversion of cholesterol to cholic acid was demonstrated.[5] The following year the transformation of desoxycorticosterone to pregnandiol was shown.[6] Further interrelationships among the steroids become evident when the cortical activity of progesterone and the progestational response to the alkyl testosterones were considered. The work [7] of the cholesterol content of the adrenal during hemorrhagic shock and on administration of the adrenocorticotropic factor of the pituitary, presents additional indirect evidence of the biologic conversion of cholesterol to other steroids. The administration of labeled cholesterol to a pregnant woman and its subsequent conversion to pregnandiol [8] prove conclusively that the former occupies a key position in the biogenesis of some of the steroids. Much additional research is required in allocating the exact position of cholesterol in the biologic synthesis of the various steroids in the mammalian organism.

Current Comment

CONSERVATIVE APPROACH TO VAGOTOMY

Acting on the concept that the hypersecretion of gastric juice in gastroduodenal ulcer is largely neurogenic, Dragstedt treated a series of patients who were troubled with more or less intractable gastroduodenal ulceration by utilizing an operation designed to remove permanently and as completely as possible the vagus innervation of the stomach. Grimson, Moore and others have reported favorable results from this operation. Lahey [1] now issues a warning against too enthusiastic reception of an operation which has not stood the test of sufficient observation. Gastroenterostomy for gastric or duodenal ulceration was accepted at one time as the operation of choice but fell into disrepute because of the high incidence of postoperative marginal jejunal ulcer and gastrojejunocolic fistula. Moreover, the operation, when not followed by these formidable complications, did not protect the patient against recurrence, hemorrhage, perforation or malignant degeneration of the gastric ulcer. Admitting that vagotomy will decrease or abolish gastric acidity and decrease hypersecretion and hypermotility, Lahey objects to its routine employment because of the frequency with which gastroenterostomy is required as part of the procedure. There is no adequate proof that gastric acidity may not return and that therefore there may not be a continuation of the recurrence of gastrojejunal ulcers and gastrojejunocolic fistulas as a result of these gastroenterostomies. While immediate relief of pain and ability to eat anything have been reported following vagotomy in many cases ulcers have recurred in some; there have been cases of cardiac arrest and fatalities probably associated with a hypersensitive vagus and a vagovagal reflex; there have been patients with abdominal distention, and there have been technical complications following the employment of this operative procedure. Vagotomy in Lahey's opinion would be ideal for a patient who had had a subtotal gastrectomy and then had a recurrent jejunal ulcer. Even though atony in the remaining stump is produced, there is still good drainage and there is no contracted pylorus to produce obstruction. In the Lahey Clinic infradiaphragmatic vagotomy is now employed for most of the patients on whom subtotal gastrectomy is done for duodenal ulcer. Because subtotal gastrectomy has had a low mortality, it is still preferred to any other intervention for the treatment of gastroduodenal ulceration. Since 1937 the mortality of subtotal gastrectomy for duodenal ulcer in the Lahey Clinic has amounted to 2.1 per cent, for gastric ulcer 0 and for jejunal ulcer 1.9 per cent. A conservative approach to vagotomy is advocated principally on the ground that sufficient time has not elapsed to evaluate both advantages and disadvantages of the procedure. Likewise the comment appeared in THE JOURNAL that the period of observation has been too short to permit a final evaluation of the method and that the question of ultimate regeneration of the divided vagi remains undecided.[2] Such complications as dilatation of the stomach and greatly impaired motility make necessary delay in final conclusions regarding the exact value of the procedure.

BRUCELLOSIS IN THE UNITED STATES

Approximately 4,000 cases of human brucellosis are reported annually to the state departments of health, but projection of the results of detailed local studies indicates that there are at least 30,000 to 40,000 actual cases. Alice Evans,[1] one of the pioneers in the study of brucellosis in this country, emphasized the discrepancy between the number of cases reported annually and the probable number of existing cases. A method of laboratory or clinical diagnosis is needed that will reveal the milder forms of the disease. Also desirable are methods for the control of brucellosis in animals and an effective therapeutic agent. The problem of diagnosis is particularly well illustrated by her own experience. Dr. Evans became infected in 1922 while working on cultures of Brucella melitensis. At first the disease was mild. For five years poor health repeatedly diagnosed as "neurasthenia" continued. Only accidentally during surgical intervention for another disease were brucellar lesions found from which B. melitensis was cultivated. The development of better methods of control, diagnosis and treatment of this widespread disease is one of the most pressing unsolved problems facing the medical profession.

4. Butenandt, A.: Naturwissenschaften **24**: 593, 1936.
5. Bloch, Konrad; Berg, B. N., and Rittenberg, D.: J. Biol. Chem. **149**: 511 (Aug.) 1943.
6. Horwitt, B. N.; Dorfman, R. I.; Shipley, R. A., and Fish, W. R.: J. Biol. Chem. **158**: 213 (Sept.) 1944.
7. Sayers, George; Sayers, Marion A.; Liang, T. Y., and Long, C. N. H.: Endocrinology **37**: 96 (Aug.) 1945; **38**: 1 (Jan.) 1946.
8. Bloch, Konrad: J. Biol. Chem. **157**: 661 (Feb.) 1945.
1. Lahey, F. H.: A Position on the Employment of Vagotomy in the Surgical Treatment of Peptic Ulcer, Lahey Clin. Bull. **5**: 66 (Jan.) 1947.
2. Vagotomy for Peptic Ulcer, editorial, J. A. M. A. **133**: 181 (Jan. 18) 1947.
1. Evans, Alice C.: Brucellosis in the United States, Am. J. Pub. Health and the Nation's Health **37**: 139 (Feb.) 1947.

ORGANIZATION SECTION

PROCEEDINGS of the ATLANTIC CITY SESSION

MINUTES OF THE ANNUAL SESSION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN ATLANTIC CITY, JUNE 9-13, 1947

(Continued from page 717)

HOUSE OF DELEGATES

Second Meeting—Tuesday Morning, June 10

The House of Delegates was called to order at 9:20 a. m. by the Speaker, Dr. R. W. Fouts.

Roll Call

On motion of Dr. Arthur J. Bedell, Section in Ophthalmology, seconded by Dr. Thomas S. Cullen, Maryland, and carried, the House directed that the signed registration slips constitute the roll call.

Presentation of Minutes

It was moved by Dr. H. B. Everett, Tennessee, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, that the House dispense with the reading of the minutes.

Report of Reference Committee on Credentials

Dr. G. Henry Mundt, chairman, announced that 173 delegates had been registered.

Report of Committee to Study Revision of the Constitution and By-Laws

The Speaker announced that the time had come for the House to consider the report of the Committee to Study Revision of the Constitution and By-Laws, and stated that Dr. F. F. Borzell, Chairman of that committee would read the proposed new By-Laws paragraph by paragraph and the members of the House would be given an opportunity to amend or to change each paragraph at the close of its reading.

Dr. Borzell read the proposed By-Law referring to membership and called for amendments. Dr. Allen H. Bunce, Georgia, called attention to the fact that part of this was contrary to the present Constitution by which the Association must be governed at least until next year.

After further discussion, it was moved by Dr. James C. Sargent, Wisconsin, seconded by Dr. H. B. Everett, Tennessee, and carried after discussion by several that consideration of the proposed revised By-Laws lie over a year until the proposed revised Constitution can be considered.

Presentation of Invited Foreign Guests

Dr. Morris Fishbein, Editor of THE JOURNAL, introduced Dr. Hugh Clegg, Editor of the *British Medical Journal;* Dr. Charles Hill, Secretary of the British Medical Association; Dr. J. A. Pridham, Chairman of the Committee on International Relations of the British Medical Association, and Dr. Guy Dain, Chairman of the Council of the British Medical Association. Dr. Dain addressed the House as follows:

Gentlemen, it gives me very great pleasure to be able to come to you and bring to you the message of good will from my Association. We are, shall we say, brother associations. The difference in our ages is not so enormous but what we are an elder brother for you. We had our centenary fifteen years ago. I would first say that we wish you very many happy returns and a very happy birthday this year in Atlantic City.

We thank you very much for the invitation which was issued to our Association to send representatives to be present at this great gathering. In coming, I want to take a moment to congratulate the American Medical Association on its achievements in its first hundred years. Obviously, I can't go over all its achievements, but I do want to single out three as being to my mind outstanding for a reason I will give you.

If you compare medical education in your country with what it was a hundred years ago and look at what your Association has done to raise the standard of medical education and qualification for the whole of the states, I think you can be extremely proud of that achievement.

Again, the work which you have done on the "patent" medicine question has been of outstanding value to the public in setting up new and more proper standards in the sale of drugs.

Then, in the third place, there is your own JOURNAL. I don't know whether Dr. Fishbein will be very pleased if I put it third in the order in which I have referred to things, but the standard of THE JOURNAL has had an enormous effect on the standards of medicine in the United States.

What I want to say to you is that it appears to me that the lesson we at home as well as you here want to learn from it is what may be accomplished by high purpose and courage. You have achieved these things without any of what we call at home "statutory powers"; you have had no government department behind you to see that the things you set out to do were accomplished. You have done it by educating your medical public and your general public to a higher standard in the matters which concern their well-being. For that you should have the very highest praise. For that to be done by a voluntary body without any statutory powers is an enormous achievement.

A person who reaches his hundredth birthday is concerned entirely with looking backward. You, as an organization, must look forward. I won't attempt to prophesy the great work you will accomplish in the next hundred years. I do want to say this one thing, that we on the other side of the Atlantic are very delighted that you have decided to take a hand in the establishment of the World Medical Association.

Coming to a birthday party, it occurred to us that it was quite an ordinary thing to bring a birthday present, and we were under considerable difficulty to decide what sort of present can possibly be given to an organization a hundred years old that it would not already have bought or have given to it. While I have no doubt that you have perhaps one or more, several, of the gadgets which I propose to offer to the Association from the British Medical Association, you won't have one which can convey better will than the one I offer you today, and that is a gavel and block for the chairman's use.

In order that it may tie the two countries perhaps a little closer together, I may tell you that it is made from the wood of the mulberry tree which stood in Charles Dickens's garden at Tavistock House when he was living there between 1851 and 1860 and writing books such as "Little Dorrit" and "Great Expectations." When we took over the property on which the British Medical Association House is built, that mulberry tree was standing there, and unfortunately it had to be taken down.

We offer you a bit of the wood with an inscription from the Association as a token of our good will and our good wishes for the next hundred years.

Dr. Fishbein requested Dr. R. L. Sensenich, Chairman of the Board of Trustees, to receive the gift, but in Dr. Sensenich's

absence, Dr. George F. Lull received it with the following remarks:

Dr. Dain and Gentlemen from the British Medical Association:

It gives me great pleasure to appear for the Chairman of the Board of Trustees to accept this gift. The inscription reads as follows:

"To the American Medical Association on the occasion of its centenary, as a token of good will from the British Medical Association, this gavel and block made from the mulberry tree which grew in the garden of Charles Dickens's home in London, where the British Medical Association House now stands. June 1947."

I can assure you, on behalf of the House of Delegates of the Association, that it will be treasured and, coming from the British Medical Association and its home in London, it will be doubly appreciated. Thank you.

Dr. Fishbein then presented Dr. Sigurdur Sigurdsson, Chief Medical Officer of Tuberculosis Control and representative of the government of Iceland and the Icelandic Medical Association, who spoke as follows:

Mr. Chairman, Members of the House of Delegates:

I have a special honor in being able to be present at your meeting. I come a far way from one of the smallest and oldest democracies of the world, from Iceland, which has only as many inhabitants in thousands as the United States has inhabitants in millions. But in spite of that we are rather a small nation we try to keep our independence and special culture, which is one of the oldest in Europe.

We have our own university and the biggest faculty of that is the faculty of medicine. We have managed to keep the health standard in Iceland as high as that of the best nations; for instance infant mortality in Iceland has for many years been one of the lowest in the world and some years it has been lower than in any other country.

I myself am leading the antituberculosis campaign in our country, and this disease was a great problem there. In 1930 we lost 21.6 per 10,000 of the population through that disease. Through organization of the antituberculosis work and especially through mass x-ray examinations of the people, which now comprise about 60 per cent of the whole nation, we have in fifteen years succeeded in reducing the tuberculosis mortality from 21.6 to 6.8 per 10,000 population, that is 68.5 per cent. As far as I know, the capital of Iceland is the only capital in the world where almost every individual has been given x-ray service, and the Icelandic nation the only nation where 40.8 per cent of the whole population has been x-ray examined in only one year.

Iceland and America have from the first been strangely related, as first discovery of this country was by a young Icelander, born and bred there, whom you might have heard of, Leif Ericson.

In the last war there has again been considerable cooperation between my small nation and your great nation. Also there have been very pleasant relations between American doctors and American medical science and my country. Therefore, it is a great pleasure to me, in the name of the Icelandic government and of the Icelandic Medical Association, to express my thanks to the American medical profession and to wish the American Medical Association good luck and great progress in its noble service to humanity.

I thank you.

Dr. Fishbein then introduced Dr. F. Kingsley Norris, representing the British Medical Association in Australia, who addressed the House, as follows:

Mr. Speaker, Ladies and Gentlemen:

I come probably farther than most people here, about 15,000 miles, but it is a great privilege to come to you here and, on behalf of the British Medical Association in Australia, to wish you well and to thank you for all the great things that you have done. But to us, apart from those great things, you have done many other things. Your Rockefeller Foundation and your Carnegie Endowment have made it possible for many of us to come abroad and to be with you and see the great things that you have done. I will just give you one personal incident of what you people have done for me.

It was my privilege to be in charge of the medical units in New Guinea, where there were a number of American units. At one time our supplies were very short. We had no means of supply except dropping, and we were running desperately low and short of anesthetics. Near me was an American unit, and along to me came the commander of that American unit. He said "I believe you are running short of anesthetics. I don't know anything about this lease-lend business, but anything we have is yours." I won't give you his name because that was not an individual speaking. That, I believe, was the whole American nation.

That was the spirit in which we served, and that was the spirit in which we lived. For those things and for that sentiment we are deeply indebted to you.

If you will allow me, I will just close with a quotation from one of your own medical men, Oliver Wendell Holmes. I may not quote it correctly. You may know it better than I do, but he was referring to a hundred years, and I think he said "Little of all we value here reaches the morn of its hundredth year without both looking and feeling queer. There is little I know that retains its youth except, as far as I know, a tree and a truth." That is broadly a quotation from one of your own medical men, Oliver Wendell Holmes.

Now you have reached the morn of your hundredth year without both feeling and looking queer, and you have retained your youth because you have built on those two things: soundness and truth.

For what you have done and for the privilege of allowing me to come here today, to meet you and to be with you, on behalf of the Australian Branch of the British Medical Association, we wish you well and thank you sincerely for the very greatest gift, that you have given always to the world.

Dr. Fishbein then presented Dr. Einar Geert-Jørgensen, senior physician of the Municipal Hospital of Copenhagen, chairman of the Danish Neurological Society and representative of the Danish Medical Association at the One Hundredth Anniversary of the American Medical Association, who addressed the House, as follows:

Mr. President, Ladies and Gentlemen:

As a delegate from the Danish Medical Association, I have the great honor to thank the American Medical Association for the invitation to the solemn Centennial Celebration of this most distinguished society. You must understand that it is impossible for me, as it would be for every Dane, to attend this session without thinking of our American colleagues who served in the war and who did their important and dangerous work. But especially I must think of the many of these brave and unselfish colleagues who lost life and health and I can, and must, say that we Danes never will forget what we owe our American colleagues and what we owe the United States of America who gave us back our lost and beloved freedom.

The German occupation was a dreadful time for us, and we will always remember and never forget the 5th of May 1945, the sunny day when the Allied troops came to Denmark, the day of freedom, peace and relief for our little nation, which loves freedom and peace as much as the great American nation does.

In the name of the Danish Medical Association but also in the name of all Danes, I request you to receive our best and most respectful thanks.

Then it is my pleasant duty to congratulate the American Medical Association and to bring our kindest regards and best wishes for the future of your famous society.

It is important to me to express our admiration for the great work that until today has been done by the American Medical Association for the progress of science and medical experience and thereby for the health of the American nation and the whole world.

At last it gives me great pleasure to deliver you a gift from the Danish Medical Association. It is an old book, Acta Medica

Bartholini, the first medical paper in Denmark, edited by our famous scientist and physician Thomas Bartholini, who lived in the late middle ages. At that time and in the next two hundred or three hundred years, progress in the sciences came from Europe, but in the last two to three decades, progress in science and especially progress in medical science has come from the United States of America.

This book is the first edition and I hope that you will appreciate it as much as we do.

With these few and I am afraid poor words which not sufficiently have explained our feelings for you and for the work you have done in the past years, I wish you—members of the powerful American Medical Association—a future with peace and friendship with other nations and a future with tenacious and incessant fighting against our common enemies, disease and ignorance.

Dr. Fishbein then introduced the representative from the government of Syria, Dr. Chafic Trefi, who spoke as follows:

Mr. Chairman, Ladies and Gentlemen:

The people of the republic of Syria, who have always had the warmest regard for the democratic people of the United States, are happy to cooperate internationally, not only to attain security, but also to improve health, because we believe sincerely that without a high standard of health throughout the world it is impossible to have harmonious international relations.

It is in this spirit and with this privilege that I come among you, bringing the sincere salute of our sanitary authorities, and celebrate with you the Centennial of the American Medical Association, which contributes enormously to the progress of medical science in all its domain.

The republic of Syria, because of her geographic position in the eastern Mediterranean, forming a bridge between the East and the West, has always shown a great interest in medical affairs. It was for this reason that, when our government became free and independent, it created a Ministry of Public Health.

It has also undertaken an extensive new health program, aiming to increase the number of doctors, hospitals and dispensaries. Actually there is no area in Syria without public health service or sanitation facilities, aiming to health security for all, regardless of residence, creed, religion or race.

A field survey of the country was carried out in order to evaluate the particular needs of individuals, because we believe that the only sound foundation for the best health service from every aspect is that of prevention. The Department of Health in Syria has the responsibility of administering a program providing maternal and child health service, medical, hospital, nursing and dental care for the indigent and medically indigent of the country.

At Damascus, our capital, we have five state hospitals with 2,000 beds, not counting the private clinics and university hospitals which are independent of the Ministry of Public Health. At Aleppo, where I work, we have four state hospitals with 1,500 beds, and in every Syrian town there is at least one state hospital and two or three dispensaries. The Syrian government in its new plan considers having a dispensary or a nursery in every Syrian village. In addition to these hospitals, there are also obstetric hospitals, sanitariums, sanitary inspectors and mobile units, with doctors and nurses to undertake both preventive and curative medicine, who will be continually traversing the country.

There are also modern laboratories to prepare vaccines against smallpox, typhoid and tetanus, and laboratories, both fixed and mobile, for the examination of drinking water. In all our state hospitals and dispensaries all treatment is free. The whole health service, including doctors and hospitals, is paid for by the state. The hospitals are provided with all the more modern adjuncts as regards x-ray, instruments and drugs such as penicillin.

The government has not limited itself to the health problem in its own country but has sent medical missions into other countries, and I myself have the honor to be a member of the mission that has been sent to the United States not only with the object of making ourselves acquainted with the progress of general medicine in this great and generous country but also to orient ourselves in various specialties such as surgery, microbiology, pediatrics, psychiatry and x-ray.

It is in this way that you, Ladies and Gentlemen, may believe that we will always be sincerely happy to work with you in a spirit of cooperation for the good of humanity, and in the name of the Syrian government I am pleased to greet you on this eventful occasion and to wish you continual activity and success in the service of your country and the world.

Dr. Fishbein acknowledged, on behalf of the American Medical Association, the priceless gift presented to the Association by Dr. Jørgensen, which will be available for exhibition in the headquarters office whenever the delegates may come to see it. He added that additional delegates and invited guests from other countries would be presented at the 2 o'clock meeting.

He introduced Dr. Augosto F. Conde, representative of the Cuban Association of Physicians, and Dr. Felix Hurtado, Dr. José Angel Bustamente, Dr. Gustavo Aldereguia and Dr. Guillermo G. Lopez, also of Cuba, Dr. Hernante Corhata of Venezuela, Dr. Francisco J. Aguilar, representative of the Medical Federation of Guatemala, and Dr. T. C. Routley, representing the Canadian Medical Association and the World Medical Association.

Dr. Routley addressed the House, as follows:

Mr. Speaker, Mr. President, Distinguished Guests and Members of the House of Delegates:

As many of you are aware, it has been my privilege each year for the past twenty-four years to bring you a message of good will from the Canadian Medical Association. On this, your centenary, I am very happy indeed once more to be the ambassador from the medical profession of the Dominion of Canada, not only to convey our good wishes and congratulations but also to express the hope that your second hundred years may be as highly successful and satisfactory as your first hundred years have been.

It is also my delightful privilege to bring you greetings from the World Medical Association, the baby member of the family of medical associations but one which is designed to play a very significant part in the promotion of health and better understanding among people of good will throughout the world.

In September 1946, on the invitation of our medical colleagues in France and Great Britain, an International Medical Conference was held in London for the purpose of considering the organization of a worldwide medical body. Delegates and observers from thirty-two national medical associations, including your own Association, met together for several days, on the conclusion of which it was unanimously agreed to organize a World Medical Association with the following objects:

1. To promote closer ties among the national medical organizations and among the doctors of the world by personal contact and all other means available.
2. To maintain the honor and protect the interests of the medical profession.
3. To study and report on the professional problems which confront the medical profession in the different countries.
4. To organize an exchange of information on matters of interest to the medical profession.
5. To establish relations with, and to present the views of the medical profession to the World Health Organizaiton, UNESCO and other appropriate bodies.
6. To assist all peoples of the world to attain the highest possible level of health.

An Organization Committee of thirteen members was appointed, including Dr. L. H. Bauer and Dr. E. L. Henderson from your own Association. The committee has met three times, and arrangements are nearing completion for the World Medical Association to hold its first meeting in Paris, France, during the week of Sept. 15, 1947. Already eighteen medical associations, including all of the larger ones, have signified their desire to become members of this new body. Your committee believes that, in the not too distant future, every national medical association of any importance throughout the world will enjoy membership in the World Medical Association.

It is not the purpose or intention of the World Medical Association to intrude into those affairs which constitutionally belong to individual associations and countries. The World Medical Association is not a super body, desiring to dictate to any one. On the contrary, the World Medical Association conceives it to be its duty as well as its privilege to do all in its power to acquaint the doctors of the world with matters of interest and importance to them and to be the medium through which doctors may assist all mankind to attain the highest possible level of health.

Very shortly after the September conference in London, the American Medical Association indicated its willingness to join the World Medical Association and give support to its aims and objects. I am sure my colleagues of the organizing committee, and the medical associations scattered throughout the world, would wish me to say that the World Medical Association was heartened indeed by this action on your part. This great Association with more than 130,000 members, committed to the lofty purpose of saving human lives, can be a tower of strength to the rest of the world in promoting those ideals and objectives which are so essential to human health and happiness.

One does not need to be a seer or a prophet to recognize the chaotic state in which the world now finds itself, and the danger signals which rear their heads as a threat to future world peace. Surely, we of the healing arts, whose lives are dedicated to the saving of human lives rather than to their destruction, have a tremendous part to play in promoting international good will and understanding. We are not concerned with political squabbles, territorial aggrandizement or economic bargaining. We have nothing to sell to one another but we have much to give to each other. We go into one another's countries, not looking for profit but bearing gifts. Surely our slogan, whether we be black men, white men or yellow men, is "What Can We Do to Help You?"

As the *British Medical Journal* so well says in its issue of May 3, "It is clear that world medicine, having no ax to grind, and being above politics and ideology, can exert a salutary influence in world affairs. Closer contact of the members of the profession throughout the world must surely advance international friendship and good will." If I might be so bold as to suggest an additional objective to this influential Association for its second hundred year period, it would be that you support enthusiastically the world movement in medicine with the same courage and devotion, strength and vision as you have done during the past hundred years in establishing in this great country the high place which you now enjoy and so rightly deserve.

Humanity faces a grave decision. We must either go forward as one world or run the risk of going into utter darkness blacker than the dark ages ever saw. We in medicine—world-wide medicine—have a vitally important part to play in promoting world health and world peace. In the immortal words of Dr. John McCrae, who said "To you from failing hands we throw the torch; be yours to hold it high"—may I say that we of the healing arts must hold that torch high—so high that it will be a light to the footsteps of mankind everywhere; and, once having seen the light and measured its beauty and appreciated its guidance, mankind will refuse to see that light go out. Surely, mankind will choose to live in peace rather than to die in war.

Dr. George F. Lull, Secretary, stated that the Association had received many telegrams and resolutions, which he did not read, among them being a very beautiful printed resolution from the Swiss Academy of Medical Sciences, signed by the President and the Secretary-General; a telegram from the Guild of Prescription Opticians of America, congratulating the Association on its hundredth anniversary; congratulations and best wishes from the Louisiana State Nurses Association; congratulations and best wishes from the Korean Medical Association, National Department of Public Health and Welfare; best wishes from Dr. Hector Valle Pineda, president of the Havana Medical Association, and from the Pan American Medical Association; congratulations and extending his appreciation from Professor Arthur Stoll, Basel, Switzerland; greetings and congratulations from the *Medical Journal of Australia;* congratulations from the American Surgical Trade Association, an organization whose membership is dedicated to service the medical profession, and from Dr. Robert P. Fischelis, secretary of the American Pharmaceutical Association; a letter from the representative of the National Health Administration of China, who will appear before the House at a later date, as he has a presentation to make at that time; a set of resolutions from the Philippine Medical Association, which Dr. Fishbein has already published in THE JOURNAL; this beautiful set of resolutions, which were to have been presented in person by Father Schwitalla, the very good friend of many of us, for the Catholic Hospital Association (As you know, Father Schwitalla was taken ill and could not come to the meeting but he sent a representative, and these resolutions were presented), and a very interesting resolution from the home office, from the Chapel of the Typographical Union, which says, in part, "This Chapel in regular meeting assembled on the 28th day of May goes on record as extending to the American Medical Association our heartiest felicitations on its One Hundredth Anniversary."

The Speaker requested the Secretary to make appropriate acknowledgments of all of these resolutions.

Supplementary Report of Judicial Council

Dr. Louis A. Buie, member of the Judicial Council, reported as follows: I am speaking on behalf of the Judicial Council. Having observed the difficulties that have arisen this morning, which arose in December, in an attempt on the part of the House of Delegates to do what every one considers to be proper in the adoption of the Constitution and By-Laws in revised form, and realizing that it is possible that some of these difficulties might have been obviated by a response to the request of the chairman of the committee which was appointed to revise the Constitution and By-Laws, of which I am also a member, that request being that the revised copy of the Constitution and By-Laws which was sent to each member of the House of Delegates a month ago be studied carefully and that suggestions be sent to the committee in order that these adjustments might be made prior to this meeting, further, that any of those who wished to discuss any vital points, such as a conflict between the By-Laws and the Constitution, as was brought out by Dr. Bunce, should come before this committee at its meeting last Saturday morning at 10 o'clock, when all of us were present and when only one individual came to present any problem, that being Dr. Henderson of the Board of Trustees—realizing all of those facts and because of the fact that the Judicial Council has in prospect and is now working on the problem of a revision of the Principles of Medical Ethics, or a rearrangement if you wish, I don't know that you can change principles any more than you can change the Ten Commandments, but with changing times and conditions we realize that certain readjustments can be made.

I make these few remarks, Mr. Speaker, because I wish to try to avoid a similar circumstance when we come to the time of presenting to this body our suggestions and your suggestions concerning an alteration in the Principles of Medical Ethics which have guarded this Association for one hundred years.

I should like to call your attention to the fact that when this responsibility was laid on the Judicial Council at the meeting of the American Medical Association in San Francisco last July, the Chairman of the Council arose and requested that suggestions be sent to this Council concerning these revisions. As the Chairman of the Council read in his supplementary report yesterday (it might have been overlooked; consequently I repeat it now), only three letters have been received during the period of a year which has elapsed. So, if there are any suggestions which you have concerning this important revision of the Principles of Medical Ethics, we will certainly be very grateful to you if you will send them in to us, the members of the Judicial Council who are charged with the responsibility of making a revision which must be approached cautiously and must be done in order that it may have lasting value.

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On behalf of the Committee to Study a Revision of Constitution and By-Laws, I should like to say that we are perfectly willing to continue our efforts in regard to carrying forward this task of the revision as you would like to have it.

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr. Britton E. Pickett Sr., Chairman, presented the following report:

1. Because of the desirability of conferring Honorary Fellowship on certain distinguished foreign guests, your committee recommends that chapter XII, section 7, of the present By-Laws of the American Medical Association be amended to read as follows: "Physicians of foreign countries who have risen to prominence in the profession of medicine and who are in attendance at the session may be elected to Honorary Fellowship by the House of Delegates on the nomination of the Council on Scientific Assembly. The several sections may make recommendations to the Council on Scientific Assembly regarding individuals for such nomination."

2. Your committee has considered the supplementary report of the Judicial Council pertaining to the revision of the Principles of Medical Ethics and approves the report in its entirety.

Respectfully submitted,

BRITTON E. PICKETT SR., Chairman.
L. G. CHRISTIAN.
ALLEN H. BUNCE.
HOMER LEE PEARSON JR.
ALFRED S. GIORDANO.

It was moved by Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Thomas S. Cullen, Maryland, and carried that the first section of the report of the reference committee be adopted.

Dr. Bedell then moved that chapter XII, section 7, of the By-Laws be amended to conform with the report of the reference committee. The motion was seconded by Dr. James C. Sargent, Wisconsin, and carried, and the Speaker declared the By-Laws so amended.

The second section of the report of the reference committee, approving the supplementary report of the Judicial Council dealing with revision of the Principles of Medical Ethics, was adopted on motion of Dr. Pickett, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried after discussion.

On motion of Dr. Pickett, seconded by Dr. Thomas S. Cullen, Maryland, and carried, the report of the reference committee was adopted as a whole.

NEW BUSINESS

Resolutions on Sections Celebrating Their Centennials

Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following resolutions, which were referred to the Reference Committee on Sections and Section Work:

WHEREAS, Centennial celebrations are excellent for our spirits and morale, and aid in stimulating further accomplishments in this country of ours; and

WHEREAS, The medical profession has every reason to be proud of and to publicize our scientific progress; and

WHEREAS, The sections of the American Medical Association have been established at varying times with reports and records of the contributions of specialists and general practitioners; be it

Resolved, That the sections of the American Medical Association likewise observe the centennials and anniversaries of their establishment with appropriate ceremonies, noting the records of achievements in the particular specialty, to center attention on scientific progress as a part of the history of the American Medical Association; and be it further

Resolved, That funds be appropriated as may be necessary.

Resolutions on Hospital Relationships—Specialty Board Relationships

Dr. John J. Masterson, New York, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, The house of delegates of the Medical Society of the State of New York on May 7, 1947 adopted the following resolutions; and

"WHEREAS, It is the policy and aim of the American Medical Association to foster affiliation of all physicians with a hospital in order that they may continue their education and increase their efficiency; and

"WHEREAS, Interference in doctor-hospital relationship is influenced by the indirect action of the various specialty boards; and

"WHEREAS, On account of the numerous complaints from returning veterans being unable to qualify for a board on account of a lack of available acceptable residencies; and

"WHEREAS, This condition is prevalent throughout the country; therefore be it

"*Resolved*, That delegates of the Medical Society of the State of New York be directed to memorialize the House of Delegates of the American Medical Association at its forthcoming June meeting in Atlantic City that the Board of Trustees be requested to appoint a committee for the purpose of investigating the hospital specialty board relationships and to take whatever means necessary to correct the situation," therefore be it

Resolved, That the House of Delegates of the American Medical Association approves the foregoing and requests the Board of Trustees to be guided accordingly.

Resolutions on Safety in Flying

Dr. Floyd S. Winslow, New York, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, It has been brought to the attention of the American Medical Association that a condition detrimental to the public interest has developed with reference to safety in flying, as evidenced by the adoption of the following resolution by the Aero Medical Association on June 6, 1947:

WHEREAS, The Civil Aeronautics Administration during the past three years has lowered the physical standards for private and student pilots; and

WHEREAS, The Civil Aeronautics Administration has permitted physical examinations of private and student pilots to be made by physicians without training in aviation medicine; and

WHEREAS, The Civil Aeronautics Administration has still further lowered the safeguards of physical qualifications by permitting the examinations of these two grades of pilots to be made by persons whose education and training do not qualify them as doctors of medicine and in some instances by persons who are untrained even in the basic medical sciences; and

WHEREAS, These actions of the Civil Aeronautics Administration have been taken contrary to authoritative medical advice and are, in the opinion of the Aero Medical Association, fraught with danger to the public and to aeronautics and have resulted in deluding the public with a false sense of security; therefore be it

Resolved, By the Aero Medical Association of the United States, at its 18th annual meeting in Atlantic City, N. J., June 3 to 6, 1947, that it condemns these dangerous policies of the Civil Aeronautics Administration; and be it further

Resolved, That in the opinion of the association, physical examinations of all grades of pilots should be conducted only by those who are doctors of medicine and who have some training in aviation medicine; and be it further

Resolved, That these resolutions be published and copies transmitted to the Secretary of Commerce and to the appropriate Committees of Congress;

WHEREAS, The American Medical Association is in accord with the opinion and action of the Aero Medical Association; therefore be it

Resolved, By the House of Delegates of the American Medical Association at its annual session in Atlantic City, N. J., that it endorses these resolutions adopted by the Aero Medical Association on June 6, 1947; and be it further

Resolved, That the Board of Trustees be authorized to take such action as deemed advisable by the Board to further maximum safety in flying.

Resolution on Increasing Pay of Medical Officers in the Several Services

Dr. James C. Sargent, Wisconsin, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The procurement of an adequate number of qualified medical officers for the armed forces has come to be a most critical problem; and

WHEREAS, It is the expressed belief of those in authority that this situation is due largely to the present discrepancy between military and civilian medical practice in the matters of income and opportunities for professional advancement; therefore be it

Resolved, That the House of Delegates go on record commending and encouraging the present efforts of the War and Navy departments and the Public Health Service in securing legislation raising the professional standards and increasing the pay of the medical officers within the several services.

Resolution on Group Practice

Dr. J. Stanley Kenney, New York, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Group practice is of increasing interest in the profession because of various prepayment plans which seek to encourage the practice of medicine in groups; and

WHEREAS, There are no largely accepted principles or rules governing the practice of medicine in groups; and

WHEREAS, It is desirable that the American Medical Association supervise this development rather than forfeit it to organizations not affiliated with organized medicine; therefore be it

Resolved, That the delegates to the Medical Society of the State of New York instruct its delegates to the American Medical Association to propose a resolution to that body that will bring about provision by the American Medical Association for the establishment of a bureau or council on group practice. The functions of such bureau will be: (a) to serve as a clearing house of information on group practice throughout the United States; (b) to formulate professional, ethical and other principles governing the development of such group practice, and (c) ultimately, at its discretion, to provide for qualifications and recognition of groups engaged in group practice in the various parts of this country.

Resolutions on S. 140

Dr. Thomas K. Lewis, New Jersey, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Senate bill 140, sponsored by Senators Fulbright and Taft, which would create a Department of Health, Education and Welfare, has been favorably reported by the Senate Committee on Expenditures in the Executive Departments, and

WHEREAS, The American Medical Association has consistently advocated placing all health activities of the federal government, except those of the Army, Navy and Veterans Administration, in a single agency or department concerned solely with health; and

WHEREAS, S. 140 does not conform to this objective; therefore be it

Resolved, That the House of Delegates of the American Medical Association expresses its unalterable disapproval of S. 140; and be it further

Resolved, That the sponsors of this measure and all other members of the Senate and of the House of Representatives be appraised of this action; and be it further

Resolved, That the constituent state associations be urged to take similar action.

Resolutions on Inclusion of General Practitioners on Staffs of Hospitals

Dr. Thomas A. McGoldrick, New York, presented the following resolutions, which were referred to the Reference Committee on General Medical Practice:

These resolutions are presented at the direction of the Medical Society of the County of Kings located in Brooklyn, which is composed of 3,400 members of the American Medical Association.

The delegates of Kings County are directed to introduce these resolutions:

Resolved, That the American Medical Association urge the inclusion of general practitioners on the staff of approved hospitals; and

Resolved, That recognition of hospitals shall not be jeopardized by the American medical colleges or colleges of special branches of medicine because of the fact that they include general practitioners on their staff; and

Resolved, That all physicians, before being rated as specialists, should spend an adequate number of years in general practice; and

Resolved, That training in hospital wards and dispensaries be accepted as a qualification for a specialist in lieu of a full time residency.

Resolution on Care of Veterans

Dr. Herbert H. Bauckus, New York, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The veterans suffering from injury or disease incurred during service in the armed forces deserve not only great sympathy from the community but medical care second to none; and

WHEREAS, In several states, through the operation of workmen's compensation laws, the highest type of medical and surgical care is provided for injured workers; and

WHEREAS, The majority of patients in veterans' hospitals are those with non-service connected disabilities, and the Veterans Administration contemplates the erection of enormously increased facilities, primarily to take care of veterans' non-service connected disabilities; and

WHEREAS, It would be false economy to deprive the veterans with service connected disabilities of the finest medical care; therefore, be it

Resolved, That the House of Delegates of the American Medical Association urge the President of the United States and the administrator of veterans' affairs to continue and augment the existing "home town" medical care program.

Resolution Requesting Discontinuance of Notarization of Declaration of Narcotics on Hand to Accompany Renewal of Stamps

Dr. James Q. Graves, Louisiana, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, It is commonly known that application papers under the Harrison Antinarcotic Act must be notarized when a physician first registers for special tax stamps; and

WHEREAS, Under this same act notarization is not required for renewal; and

WHEREAS, It is required that the declaration of narcotics on hand (inventory) must accompany the application for renewal of stamps and such form must be notarized; and

WHEREAS, This second notarization appears useless and unnecessary; be it

Resolved, That the House of Delegates of the American Medical Association through the proper channels appeal to the Collector of Internal Revenue in Washington for the discontinuance of this requirement in regard to notarization.

Resolutions on Placing Statue of Dr. William Crawford Gorgas in New York University Hall of Fame for Great Americans

Dr. Lloyd Noland, Alabama, presented the following resolutions, which were referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Dr. William Crawford Gorgas, native son of Alabama, Surgeon General of the United States Army, 1914-1918, passed away July 4, 1920, having served his country in war and in peace with rare skill and ability, thereby reflecting fame and distinction on the medical profession of his native state of Alabama and on that of the nation; and

WHEREAS, In May 1937 a bust of Dr. Gorgas was placed on the capitol grounds at Montgomery with the authority and approval of this association, on which was a tablet describing Dr. Gorgas as "A Servant of Mankind and A Benefactor to Humanity" and further expressing the sentiment of this association in respect to his work, that "his vision and his initiative translated the known scientific facts concerning yellow fever into practical accomplishment, thereby making possible the control of this scourge of the tropics and the building of the Panama Canal"; and

WHEREAS, The judgment of the medical profession of America was suitably expressed by that eminent member of the profession, Dr. William H. Welch, while President of the American Medical Associaton in 1912, when presenting Dr. Gorgas at Johns Hopkins for an honorary degree as follows:

"In behalf of the Academic Council, I have the honor to present for the honorary degree of Doctor of Laws Dr. William Crawford Gorgas, Colonel in the Medical Corps of the United States Army, member of the Isthmian Canal Commission, and Chief Sanitary Officer of the Isthmian Canal Zone, formerly President of the American Medical Association, physician and sanitarian of the highest eminence, who, by his conquest over pestilential diseases, has rendered signal service to his profession, to his country, and to the world.

"With high administrative capacity and with full command of the resources of sanitary science, Colonel Gorgas has given to the world the most complete and impressive demonstration in medical history of the accuracy and the life-saving power of our new knowledge concerning the causation and mode of spread of certain dreaded epidemic and endemic diseases.

"He it was who, by application of the discoveries of Major Reed and his colleagues of the Army Yellow Fever Commission, was mainly instrumental in freeing Cuba of yellow fever and he it is who, in spite of obstacles and embarrassments, has made the construction of the Isthmian Canal possible without serious loss of life or incapacity from disease—a triumph of preventive medicine not surpassed in importance and significance by the achievements of the engineer.

"In the conquest of science over disease, in the saving of untold thousands of human lives and of human treasure, in the protection of our shores from a formerly ever threatening scourge, in the reclamation to civilization of tropical lands, in results such as these are to be found the monuments of our laureate, his victories of peace, to which this university would now bear testimony by such honor as it can bestow"; now therefore be it

Resolved, By the Medical Association of the State of Alabama in annual convention assembled at Birmingham on April 14-16, 1947 that it is the judgment of this association that William Crawford Gorgas is worthy of election to the New York University Hall of Fame for Great Americans, and that steps should be taken to that end; and be it further

Resolved, That this resolution be presented by the delegates from this association to the House of Delegates of the American Medical Association at its next annual meeting, with the view that a suitable resolution may be adopted by that Association, endorsing and concurring in the action of this association; and be it further

Resolved, That a committee be appointed by the President of this Association, to take such other steps as may seem expedient to carry out the purpose of this resolution.

Resolution on Hospital Standardization

Dr. Edward H. McLean, Oregon, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, The Council on Medical Education and Hospitals, through the establishment of standards for hospitals and their periodic inspection, has contributed materially to the development of high type hospital service and to proficient professional care in hospitals; and

WHEREAS, The American College of Surgeons has also established hospital standards and carries on periodic inspection; and

WHEREAS, The American College of Surgeons, representing as it does the surgical specialties, has placed primary emphasis on this phase of medical service in hospitals; and

WHEREAS, The interests of the public and the medical profession as a whole are best served by the establishment and enforcement of standards which give due weight to all the various phases of medical practice; therefore be it

Resolved, That the Council on Medical Education and Hospitals be authorized and directed to review the various existing forms of hospital standardization and in cooperation with the constituent state medical associations promulgate and enforce new and up to date standards that reflect the needs of all phases of medical service and professional care in hospitals.

Resolutions on Training of Medical Students to Administer Programs of Health and Medical Services in Schools and in Industry

Dr. Clifford C. Sherburne, Ohio, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, The establishment of a central, coordinating unit to administer programs of health and medical services and health educational activities in universities, colleges, secondary school systems and industry is being attempted in many communities in an effort to bring about efficient and economical operation of such programs; therefore be it

Resolved, That so far as practical, the administration of such programs should be under the leadership and control of a doctor of medicine, possessing administrative ability and with experience and training in the technics of preventive medicine and health education; and be it further

Resolved, That all schools of medicine be urged to provide training which will equip graduates for administrative work of this character in order that leadership and coordination may be furnished by medically trained administrators.

Resolutions on Hospital Competition with Private Practice

Dr. B. R. Kirklin, Section on Radiology, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, Incorporated voluntary hospitals in several communities have urged physicians, either by letter or word of mouth, to refer ambulatory patients to the hospital for diagnostic and therapeutic medical services to be rendered by specialists in the hospital; and

WHEREAS, For the purpose of increasing their profits from these medical procedures some hospital administrators have even stated that they would withdraw staff privileges from physicians and surgeons who refused to refer their patients to the hospital for these outpatient medical services; and

WHEREAS, Such competition of hospital corporations with private practicing physicians who maintain private offices and the use of such tactics to obtain outpatients for the hospital to its own profit is in violation of the Principles of Medical Ethics and the policies of organized medicine and contrary to the best interests of the patients involved; therefore be it

Resolved, That the House of Delegates of the American Medical Association hereby expresses its emphatic disapproval of such practices which place hospital corporations in the practice of medicine in direct competition with private practicing physicians; and be it further

Resolved, That the Council on Medical Education and Hospitals of the American Medical Association be instructed to convey the sense of these resolutions to all hospitals registered by said Council; and be it further

Resolved, That a copy of these resolutions be transmitted to the American College of Surgeons with the request that its Committee on Hospital Standardization bring said resolutions to the attention of the administrators of hospitals which they inspect.

Resolution on Dissemination of Information Pertaining to Matters of Public Health

Dr. Arthur J. Bedell, Section on Ophthalmology, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business, with the suggestion that that committee call on the Judicial Council if it sees fit:

WHEREAS, It is not contrary to the Principles of Medical Ethics as determined by the American Medical Association for members of the Association to disseminate information pertaining to matters of public health, such as cancer, diabetes, venereal disease and other conditions, by lectures, demonstrations, radio talks, pamphlets, conferences or other means to nonmedical groups; and

WHEREAS, Ophthalmic subjects such as vascular disease, glaucoma, retinal disorders, optic nerve disease and so on, considered as potential causes of blindness, are matters of grave importance to the public; and

WHEREAS, The prevention of blindness is one of the chief obligations of ophthalmologists; therefore be it

Resolved, That the Section on Ophthalmology of the American Medical Association declares that it is entirely within the definition of medical ethics for its members to engage in lectures, demonstrations, the preparation of pamphlets and other measures suitable for the dissemination of information designed to prevent blindness, and directed to any nonmedical group.

Resolution on Clarification of Rules Relating to Medical Service Fees Received from the Federal Government

Dr. Thomas D. Cunningham, Colorado, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Many members of the American Medical Association are now being remunerated financially by various branches of the federal government as the result of pension rights or retirement pay from the Army or Navy and for services rendered as Veterans Administration consultants, teachers in Veterans Administration institutions, experts in federal compensation cases or as participants in "Hometown Care Plans"; and

WHEREAS, Much confusion now prevails regarding the numerous rules, regulations and directives of the various branches, bureaus, agencies and commissions of the federal government; and

WHEREAS, The receipt of income from one branch of the federal government would seem in certain instances to preclude the acceptance of fees from other branches of government; now therfore be it

Resolved, That the House of Delegates of the American Medical Association instruct the Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and the Bureau of Legal Medicine and Legislation to collect, annotate, analyze, interpret and publish a digest of all the rules and regulations of the federal government pertaining to medical practice and medical service fees.

Resolution on Change of Policy of American Specialty Boards

Dr. Thomas D. Cunningham, Colorado, presented by title a Resolution on Change of Policy of American Specialty Boards, which was referred to the Reference Committee on General Medical Practice. The resolution reads:

WHEREAS, Certain of the American specialty boards not only refuse to grant credit for experience and training acquired in the field of general practice but have also recently announced discontinuance of their former practice of according credit for preceptorships with a certified diplomate and have ruled instead that every applicant for certification must serve a lengthy residency following his internship; and

WHEREAS, This recent change in policy constitutes an unfair imposition on many returned medical veterans and other young physicians who find it impossible to obtain such residencies; and

WHEREAS, Doctors entering the various specialties without any experience or training in the field of general practice find it difficult, if not impossible, to develop a broad overall understanding of the field of medicine as a whole, and

WHEREAS, General practice offers unique opportunities for the development of individual initiative, self reliance, personality development and professional growth; and

WHEREAS, It is the opinion of the American Medical Association that general practice and preceptorships are two of the best methods of teaching the art of medicine; and

WHEREAS, Qualified and experienced preceptors already certified by these boards are available in all parts of the United States; and

WHEREAS, The art of medicine is frequently neglected in hospital residencies owing to overemphasis on the science of medicine; now therefore be it

Resolved, That the House of Delegates of the American Medical Association requests the Advisory Board for Medical Specialties and the several American specialty boards to review and reconsider their policies in relation to general practice, residencies and preceptorships in accordance with the foregoing statements.

Resolutions on Effective Program of Public Relations

Dr. Robertson Ward, California, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The House of Delegates has authorized and endorsed an effective program of public relations for the American medical profession; and

WHEREAS, The American Medical Association is the only organization which is qualified to speak with authority for American medicine; now therefore be it

Resolved, That the House of Delegates of the American Medical Association hereby requests and urges the Board of Trustees of the Association to provide sufficient funds in each annual budget of the Association for the conduct of the Association's public relations program; and be it further

Resolved, That if the Board of Trustees is convinced that the Association cannot afford to carry out a public relations program as heretofore approved by the House of Delegates, membership dues payable by each member of the Association be established as soon as possible, such dues to be not more than $10 per annum.

Resolution on News Releases of American Medical Association

Dr. Harry Aranow, New York, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The American Medical Association issues a news release each Friday on the content of articles appearing in the forthcoming JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION; and

WHEREAS, These releases reach the public through the newspapers before the physicians have received the copies of their JOURNAL containing the complete article; and

WHEREAS, Patients partially informed through these releases frequently ask their physicians about such items; and

WHEREAS, These questions have been a source of embarrassment to the medical profession and have tended to affect adversely the confidence placed by the patient in the doctor's knowledge of current scientific advances; therefore be it

Resolved, That such advance press items either be discontinued altogether or be released after actual receipt by the medical profession of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Resolution on Deductible Items for Federal Income Tax Purposes

Dr. L. G. Christian, Michigan, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The expenses of attending conventions, including medical conventions, are now deductible in federal income tax compilations; and

WHEREAS, The expenses of attending medical postgradnate meetings and conferences are not allowed as deductible items for federal income tax purposes; therefore be it

Resolved, That the House of Delegates of the American Medical Association request the Board of Trustees to contact the proper governmental agencies to put this into effect.

Resolution on Nursing Shortage

Dr. Walter W. Mott, New York, presented the following resolution, which was referred to the Reference Committee on Medical Education:

WHEREAS, There is a nationwide nurse scarcity of alarming proportions, with recently compiled statistics indicating a national shortage of 40,000 nurses, 16 per cent of the hospitals in the United States with closed beds, and 33,000 beds in our hospitals unavailable because of this nurse shortage; and

WHEREAS, In the month of April 1947 in New York State, hospitals reported 1,831 closed beds and waiting lists of 8,463 patients, primarily because of nurse shortage; and

WHEREAS, The national enrolment of 31,000 students in approved schools of nursing in 1946 was some 13,000 fewer than the schools sought, and approximately 40 per cent fewer than the 1945 enrolment; and

WHEREAS, This trend and the actual shortage are of serious concern to the nation's health; and

WHEREAS, The use of the bedside worker trained to perform many routine tasks in the care of bed patients in hospitals has been proved by wartime experience in both military and civilian hospitals to be an acceptable expedient to supplement the services of available graduate professional nurses to the advantage of the patients' care; and

WHEREAS, The New York State Board of Nurse Examiners, while licensing practical nurses with requisite training and qualifications, prohibits the training of practical nurses in any hospital maintaining a school for the training of graduate professional nurses; and

WHEREAS, The best facilities for the training of those concerned with the care of the sick are generally to be found in those hospitals with approved schools of nursing; and

WHEREAS, Short orientation courses for so-called attendants, or nurse's aides, do not appear to offer a satisfactory solution to the problem of better and more adequate bedside care; and

WHEREAS, The Medical Society of the State of New York has gone on record as endorsing an extension of the training program for practical nurses, in addition to its continued efforts to increase the available supply of registered professional nurses; and

WHEREAS, The Medical Society of the State of New York, in cooperation with the State Board of Nurse Examiners and the New York State Hospital Association, seeks liberalization of the interpretation of existing laws so as to permit the training of practical nurses in all hospitals now conducting training schools for registered professional nurses; and

WHEREAS, The Medical Society of the State of New York urges the establishment of training programs for practical nurses in approved hospitals not at present conducting a nurse training program of any sort; therefore be it

Resolved, That the Board of Trustees of the American Medical Association is hereby requested to take action urging similar steps on a nationwide basis, in collaboration with other bodies concerned with the training of nurses.

Resolutions on Medical Care of Dependents of Service Men

Dr. Raymond L. Zech, Washington, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The objectives of the Emergency Maternal and Infant Care program have been accomplished through the cooperation of civilian doctors; and

WHEREAS, The Medical Departments of the armed forces now are adequately staffed to care for the dependents of service men; therefore be it

Resolved, That in the interests of economy during peacetime the medical care of dependents of service men might properly be made a function of the Medical Departments of the armed services; and be it further

Resolved, That the American Medical Association direct the attention of the proper committees in Congress to this matter, with the object of transferring these functions to the medical deparments of the armed forces.

Resolutions on Allotment of Residencies

Dr. Ivan Fawcett, West Virginia, presented the following resolutions, which were referred to the Reference Committee on Medical Education:

WHEREAS, There is great need for more general practitioners of medicine especially in the smaller communities of this country; and,

WHEREAS, General practice in such areas tends to develop self reliance and a well rounded knowledge of the entire field of medicine, thereby giving candidates for specialization a broad professional educational basis; therefore be it

Resolved, By the House of Delegates of the West Virginia State Medical Association, that we approve the principle of alloting one-half the specialty residencies to applicants who have had five years' experience in general practice in smaller communities, say under 10,000 population, and allowing due time credit, say two years, for such general practice; and be it further

Resolved, That our delegates to the American Medical Association be instructed to present these resolutions to the House of Delegates of the American Medical Association at the Atlantic City session with the request that they be approved and forwarded to the various specialty boards for consideration.

Supplementary Report of Board of Trustees

WORLD MEDICAL ASSOCIATION

Dr. R. L. Sensenich, Chairman, presented the following supplementary report, which was referred to the Reference Committee on Reports of Board of Trustees and Secretary:

The House of Delegates has been informed of the preliminary meetings preparatory to the formation of a World Medical Association and this matter is included in the report of the Board of Trustees. Dr. E. L. Henderson and Dr. Louis H. Bauer of the Board of Trustees represented the American Medical Association at a preliminary organization meeting in London. Dr. Henderson and Dr. Bauer, together with Dr. Ernest E. Irons as an observer, have been designated to represent the Association in a meeting to be held later in the year. This would seem to be an opportunity and responsibility of the American Medical Association to assist in the development of a world medical front in meeting problems as they develop in the activities of the World Health Organization and in the divisions of the United Nations.

PAN AMERICAN MEDICAL FEDERATION

A Pan American Medical Federation is in process of development and Dr. Harrison H. Shoulders, Dr. Charles Gordon Heyd and Dr. Austin E. Smith represented the American Medical Association at a preliminary meeting at Havana last autumn. Pan American nations are looking to the United States and Canada for leadership in medical progress, and this would seem to be a helpful measure in the promotion of higher standards of medical care in the Western Hemisphere.

COMMITTEE ON LIAISON WITH VETERANS ADMINISTRATION

The Board of Trustees has appointed a committee to serve as a means of liaison with the Veterans Administration in consideration of frequently developing problems of veterans' medical care. Dr. Herbert H. Bauckus, Buffalo, Dr. Edgar P. McNamee, Cleveland, Dr. H. H. Shoulders, Nashville, Tenn., Dr. R. L. Sensenich, South Bend, Ind., and Dr. George F.

Lull, Chicago, were named to represent the Association. This committee was appointed by the Board of Trustees because of the apparent emergencies so frequently developing.

RESOLUTION ON INSURANCE AGAINST LOSS OF WAGES DURING SICKNESS

A resolution introduced by Dr. Alex F. Burgess, Rhode Island, at San Francisco concerning loss of wages during sickness and the report of the reference committee were referred to the Council on Medical Service. That Council, however, is at a loss to interpret the meaning of the report of the reference committee, and the Board of Trustees referred this question to the Judicial Council for interpretation. The Judicial Council has now clarified the meaning of the reference committee's report, and the matter has been referred to the Council on Medical Service for study and report to the Board of Trustees.

WOMAN'S AUXILIARY

The office of the Woman's Auxiliary of the American Medical Association is now located in the headquarters of the American Medical Association. This should make possible a far more effective coordination of the activities of the Auxiliary and the Association.

INCREASE IN COSTS OF OPERATION

The costs of operation of the Association have increased very greatly in the last several years. The activities of the Association have been greatly expanded. Operating costs in employment of personnel to carry on these activities are the major items in those increases. However, material costs, especially paper, have increased very greatly. Proposed legislation to increase United States postal rates if enacted would add approximately $89,000 to the annual costs of the Association. The income from the Association is derived from advertising and JOURNAL subscriptions. As the $8 annual subscription price of THE JOURNAL is only a minor fraction of the cost of the production of THE JOURNAL, it is evident that the activities of the Association are dependent on the advertising. The Board of Trustees found it necessary to make some reduction in the operating budgets in order to avoid going into reserve set up for the safety of already established activities of the Association. This information is to assist the House in the consideration of proposals of new activities that may be presented to the House.

Respectfully submitted,

R. L. SENSENICH, Chairman.
ERNEST E. IBONS, Secretary.
DWIGHT H. MURRAY.
WILLIAM F. BRAASCH.
LOUIS H. BAUER.
ELMER L. HENDERSON.
JOHN H. FITZGIBBON.
JAMES R. MILLER.
CHARLES W. ROBERTS.

Report of Reference Committee on Legislation and Public Relations

Dr. Thomas P. Murdock, Chairman, presented the following report, which on motions of Dr. Murdock, duly seconded and carried, was adopted section by section and as a whole:

1. Resolutions on Medical Care of Veterans: Your reference committee has reviewed the resolutions presented by the Missouri State Medical Association on Public Law No. 293, which permits the employment of unqualified professional personnel in the Veterans Administration.

Your committee is in agreement with these resolutions in principle and submits the following substitute resolutions:

Resolved, That the House of Delegates of the American Medical Association go on record in its disapproval of the employment of unqualified personnel in the Veterans Administration; and be it further

Resolved, That it recommends the repeal of this provision in Public Law No. 293.

2. Report of Council on Medical Service dealing with legislative matters: That portion of the report of the Council on Medical Service dealing with legislative matters was reviewed by the Reference Committee on Legislation and Public Relations.

Your committee endorses heartily the activities of the Council on Medical Service and calls to your attention the enormous amount of work done by this council.

Your committee also feels that great praise is due Dr. Joseph S. Lawrence and the Washington staff for their constant vigilance in our behalf.

3. Resolutions on Hospitals Entering into the Practice of Medicine: Your reference committee has given careful consideration to the resolutions presented to the House of Delegates by the West Virginia State Medical Association and presents the following resolutions in replacement:

Resolved, That the House of Delegates of the American Medical Association is in complete agreement with the recommendations of the West Virginia State Medical Association in its opposition to the encroachment by hospitals and other organizations on the private practice of medicine; and be it further

Resolved, That all fees for medical services be set by and collected by or for doctors of medicine rendering this service, and that all policies and practices involving medical services be approved by the medical board or medical staff before being put into effect; and be it further

Resolved, That the Council on Medical Education and Hospitals recommend strongly that all hospitals conform to these resolutions; and be it further

Resolved, That the House of Delegates of the American Medical Association go on record as strongly disapproving this practice of encroachment, and that notice of this action be sent to the American, Protestant and Catholic hospital associations and to Blue Cross organizations.

Respectfully submitted,

THOMAS P. MURDOCK, Chairman.
THOMAS A. MCGOLDRICK.
WILLIAM M. SKIPP.
LLOYD NOLAND.
FORREST J. PINKERTON.

On motion of Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. H. B. Everett, Tennessee, and carried, the House recessed at 12 m. to reconvene at 2:15 p. m.

Tuesday Afternoon

The House reconvened at 3:15 p. m., with the Speaker, Dr. R. W. Fouts, presiding.

During the luncheon for the delegates, the members of the House had the pleasure of hearing an address by Hon. John N. Brown, Assistant Secretary of the Navy for Air, and one by Hon. Robert P. Patterson, Secretary of War.

Introduction of Invited Foreign Guests

Dr. Morris Fishbein, Editor of THE JOURNAL, introduced several foreign guests.

Dr. George Constam, representative of the government of Switzerland and the Swiss Medical Federation, who later addressed the House, was first introduced.

Dr. Fishbein then presented Dr. Manuel Guevera Oropesa, a representative of the Mexican National Medical Association, and Dr. Francisco de P. Miranda, Mexico City, one of the leading internists of the world, the latter of whom spoke as follows:

Gentlemen, I bring to you the greetings of the Secretary of Public Health and Welfare of Mexico and I am also representing the National Academy of Medicine.

Dr. Fishbein then presented Dr. Gonzalo Esguerra Gomez, Bogota, Colombia, who presented a statement printed in Spanish.

Dr. Szeming Sze, official delegate from the Chinese Medical Association and the Republic of China, was then presented and spoke as follows:

Mr. Speaker, on behalf of the Chinese Medical Association I have the honor to bring to you not only fraternal greetings but also our most cordial congratulations. According to Chinese custom on special birthdays, like a hundredth birthday, we present a scroll with an appropriate theme and I have been requested to bring to you today an appropriate scroll. It is written in Chinese. I think Dr. Fishbein may have difficulty in translating it. I will just take one minute to translate it for him. A Chinese painting, a painting of a pine tree, which in China is emblematic of longevity, and the inscription reads "To the American Medical Association on the occasion of its hundredth anniversary, the Chinese Medical Association respectfully presents this, June 1947, at Atlantic City." There is a

verse from our classics, and the thought of that might be translated "Long life to the profession which gives long life to mankind and humanity."

Dr. Fishbein then presented Dr. José Valls, a representative of the Argentine Medical Association, widely known throughout the world as a great contributor to orthopedic surgery, who addressed the House as follows:

Gentlemen, I am very pleased to bring to you the greetings of the Argentine Medical Association, of which it is my privilege now to be the president, and also of the University of Buenos Aires, to which I belong.

Dr. Harald Bjelke, a delegate of Norway and the Norwegian Medical Association, was then presented and read the following address:

While traveling in the United States on a Rockefeller Foundation grant I was informed that the Norwegian government had been invited to participate in the Centennial Celebration of the American Medical Association, and that in a cabinet meeting of March 27 I had been appointed to represent the government and bring you its heartiest greetings. I have also been informed by the executive board of the Norwegian Medical Association that Dr. Thorstein Guthe, who was to have been their representative, unfortunately is unable to be here, and the board has asked me to greet you on behalf of the Norwegian medical profession and to thank you for all assistance accorded Norwegian physicians who have come to study in the United States, and also to thank you for all that American medical science has done for the benefit of peoples' health also in Norway.

After having spent some months here and seen with my own eyes the high level of medical science and research in this great and rich country with its forty-eight states, I am very happy indeed to be here and to convey to you their congratulations. On behalf of the Norwegian government and the Norwegian Medical Association I express the wish that the progress which medical research and work have made in this country in the past hundred years may continue and, with the opportunities which you have here, may become still greater—for the benefit of all humanity everywhere—not only in medicine but also morally, so that the peoples of the world some day, in the not too distant future, can live together in peace and happiness, both as individuals and as states, peoples, and races.

Dr. Gyula Bencze, after being presented to the House by Dr. Fishbein, read the following address:

Mr. Speaker, Members of the House of Delegates, Ladies and Gentlemen:

As delegate from the faculty of medicine of the Pazmany Peter University and the Medical Association of Budapest, I have the duty and pleasure to thank you for your kind invitation and to bring you their best wishes. Your centenary affords the first opportunity to reestablish the scientific contacts broken by the war.

International collaboration has been very fruitful in the past. We are happy to be able once more to join in the common effort and be in a position to benefit from the great achievements of American science, which has earned the admiration and thankfulness of the whole world with its progress even during the years of general destruction of the past war.

Next year the Budapest Medical Association will celebrate a memorial for the great Hungarian Philip Semmelweis, "the savior of mothers." It is therefore my privilege and pleasure to extend to you the invitation of the Medical Association of Budapest, and may I express the hope that your delegates will participate in the Budapest meetings. Thank you.

Dr. Fishbein announced that the next speaker came as a representative of two important organizations, the Royal Egyptian Medical Association and at the same time the Saudi Arabian government, Dr. A. Z. Abushady. Dr. Abushady spoke as follows:

Mr. Chairman, Fellow Colleagues:

It is both my pleasure and my honor to convey to you the greetings of the Saudi Arabian government and of the Royal Egyptian Association. Perhaps a number of you are aware that one of the oldest model colleges of medicine was created in Cairo over a century ago and thanks to the collaboration of French scholars and later of British scholars and medical men we managed not only to develop in the University of Cairo the famous medical college, but also the College of Medicine at Alexandria, where I was honored by holding the professorship of bacteriology for some time. I am sure in extending these greetings to you in behalf of the Saudi Arabian government, which is developing many model institutions for the advancement of public health, and of the Royal Egyptian Medical Association, it would be appreciated by my government and association if I should extend also to you a hearty welcome to visit these lands and to see these parts of the globe where appreciation of Western democracy and Western sciences and particularly medical science is advancing in a practical way, as shown by the hundreds of students that are now studying medicine in Britain and in America and are unofficial ambassadors of friendship between both countries.

Dr. Fishbein recalled Dr. George Constam of Switzerland, who desired to present a special medal developed for this occasion. Dr. Constam addressed the House as follows:

Mr. Chairman, ladies and gentlemen, the Federation of Swiss Physicians charges me to express to you the most cordial greetings and sincerest congratulations. The Constitution of the United States of America serves as a model for the one on which the actual political structure of Switzerland is based, and this proves that the two countries in spite of the great difference in size and population have many fundamental ideas in common. Therefore, a great number of problems which the American Medical Association had to solve or will have to face were, are and will be of importance to the Swiss Medical Association.

For many years we have followed closely and with the greatest interest the development of medicine, its basic sciences and technic in this country, and we have admired the important and often decisive role the American Medical Association has played in leading your country to the undisputed first rank in universal medicine.

The Federation of Swiss Physicians is very happy to have today an opportunity to express to you its admiration for what your Association has accomplished during the last hundred years for the benefit not only of your and of our country but of the whole world.

As a modest sign of our gratitude, I have the honor to present you this little medal and to express to you the hopes that you will continue your so very successful activities for the benefit of mankind.

Dr. Morris Fishbein, Editor, THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, stated that the Board of Trustees of the Association had in mind preparation of a permanent special place for these trophies and tokens in the headquarters office, in the reception room, with suitable labels, so that they will be available at all times to the entire membership of the Association. He then presented the representative of the National Medical Association of Panama, Dr. J. S. Vallarino, who spoke as follows:

Mr. Chairman and delegates, my colleagues and friends, I want to extend our greetings and the heartiest best wishes for the continued success of the American Medical Association. It was through the great efforts of one of the great men of the past that the sanitation of the Panama Canal Zone was carried forward and enabled the construction of the Canal, and I want to pay great tribute here to our very beloved William Crawford Gorgas. Thank you.

The Speaker announced that there would be opportunity for the introduction of new resolutions, if any, and for the reception of committee reports, if any, either before or after the Executive Session.

Communication on Pan American Organization

The physicians from Cuba were again presented and, with the permission of the House, Dr. Felix Hurtado, delegate from

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the Pan American Congress, was granted ten to fifteen minutes to present to the House a problem in which he was interested, which he did as follows:

The Colegio Medico Nacional de Cuba (Cuban Medical Association) called the first Pan American Medical-Social Congress, which met in Havana in December 1946.

In this congress have been represented all the medical organizations of the continent, including the American Medical Association, which sent three men under the leadership of Dr. Shoulders, who can inform you about their impressions of this event.

We can consider the reunion of Havana as the first step in the consolidation of a big Pan American organization of physicians.

We believe that this is a desirable opportunity to consider the importance of a fraternal union among all medical doctors in favor of their own interest and also in favor of a great development of medical progress.

It is true that medical development is not similar in all the countries of the continent because the social and economic development of all countries on the American continent have not reached the same level.

We know very well that these particular circumstances do not permit the establishment of a general system and similar methods for the whole continent.

For these reasons the first and principal point clarified by the first Pan American Medical-Social Congress and the Pan American Medical Confederation is the statement that each country will conserve its particular internal structure in accordance with its medical organization, with entire freedom to handle its own domestic affairs.

Therefore on these political principles and philosophic basis these organizations would be conducted according to their own ideas and be entirely independent of the general rules for the establishment of the Pan American Medical Confederation.

The Pan American Medical Confederation would be an international bureau for the establishment of a real link among all the medical groups of the continent. This is a simple interpretation of that historic document called the "Chart of Havana," accepted by all the countries represented in the first Pan American Medical-Social Congress. In order to facilitate the administration and the study of the medical affairs of the continent, the Pan American Medical Confederation has divided the continent into five regions:

Northern Zone: Canada and the United States. Seat: American Medical Association, Chicago.

Central American Zone: Mexico, Honduras, Guatemala, Nicaragua, El Salvador, Costa Rica and Panama. Seat: Medical Federation of Guatemala (Guatemala).

Caribbean Zone: Cuba, Haiti, Santo Domingo, Puerto Rico, Colombia and Venezuela. Seat: Venezuelan Medical Federation (Caracas).

South Atlantic Zone: Brazil, Argentina, Paraguay, Uruguay. Seat: Medical College and Syndicate of Uruguay (Montevideo).

South Pacific Zone: Chile, Peru, Ecuador and Bolivia. Seat: Medical Association of Chile (Santiago).

The present state of this organization and the entrance of the countries is, as follows:

Central American Zone: All the countries: Mexico, Honduras, Guatemala, Nicaragua, El Salvador, Costa Rica and Panama.

Caribbean Zone: Cuba, Santo Domingo, Puerto Rico, Colombia and Venezuela. Only lacking is the entrance of Haiti.

South Atlantic Zone: Uruguay and Argentina. The Argentine Medical Association has made its entrance conditional on the scientific purposes of the confederation because this is the only way its by-laws allow it to be associated with other institutions.

As to the remaining countries of the zone (Brazil and Paraguay) we maintain contact with the delegate of the National Academy of Medicine of Rio de Janeiro, the near entrance of which we are expecting. We are also in contact with our Paraguayan colleagues, and we are expecting their entrance into the organization.

South Pacific Zone: Chile, Peru and Ecuador. Only Bolivia has not entered, but we are already in contact with the Bolivian medical institutions and personnel and expect them to enter.

The Pan American Medical Confederation is constituted by the medical organizations that in each country represent and group a majority of the professional physicians, such as the American Medical Association, the Medical Association of Chile, the Peruvian Medical Association, the Venezuelan Medical Federation, and some, as the National Medical College of Cuba that, by virtue of the national laws, group all the physicians, since it is a necessary prerequisite to the practice of medicine in Cuba to be inscribed in the National Medical College.

All those institutions are wholly autonomous in the execution of their functions, having only to be grouped in each zone and appointing a delegate from each country, constituting with the other three secretaries appointed by the country seat of the zone what is called the Zonal Secretariat.

To our members' best understanding each Zonal Secretariat (constituted of the three secretaries of the country seat and a delegate for each of the countries that forms it) meets from time to time with the remaining Zonal Secretariats and Havana's Secretariat in a body called the General Council, which will draw up the basis and programs of a general meeting, the Pan American Medical-Social Congress, which meets every other year in a different country of our continent.

The Secretariat of Havana, then, is a coordinating group of the relationships of the zones among themselves, those of the General Council of the Confederation and the Pan American Medical-Social Congress.

As a result of an extensive and deep study of the medical situation in the continent, the Executive Board of the Pan American Medical Confederation has considered two sides for interpretation of the medical standards in the continent. On one side is included all the matters in relation to scientific development.

In this sense information is very important about medical education: (*a*) medical school standards; (*b*) special information about standards for students, particularly in the premedical aspects; (*c*) hospital services: department of social assistance (social work), bad teaching, center of research: foundation, laboratories, institutes (one example of each of these three types: Rockefeller Foundation, National Laboratory of Chile, Institute of Finlay, Havana); (*d*) academies: academy of medical science, medical societies; local branches of international corporations; (*e*) medical congress: staff meetings, annual meetings of national congress, international meetings or congress; (*f*) international center, like "Instituto de Proteccion a la Infancia," Montevideo, or Pan American Sanitary Bureau.

The other side is called the social aspect, which includes different topics: (*a*) medical institutions: societies or associations, free, independent, private, regular or official and compulsory; (*b*) trade unions (medical organizations organized under rules similar to those of labor unions); (*c*) syndicates. Philosophical orientation of the medical groups: (*a*) individualist doctrines; (*b*) collectivist doctrines. 3. Particular aspect of social security: (*a*) insurance companies; (*b*) mutual societies; (*c*) compulsory social security; (*d*) the new concept of social security particularly adapted to each country; (*e*) social security in the United States.

The general policy of the Pan American Medical Confederation would be to develop a basic plan of education and to extend all different kinds of advices in order to facilitate the most rapid development particularly in those countries in which the standard is yet very low.

We consider that there will not be any trouble for the American Medical Association particularly as this institution does not interfere with any domestic action in any medical group in the continent.

The Pan American Medical Confederation will offer a very important support to the national local organization and in many times could offer its friendly intervention to promote always the most favorable solution among the medical groups.

Finally, in the name of the Pan American Medical Confederation we request the Executive Board of the American

Medical Association to make a motion before the corresponding body in order of your taking action for the incorporation to the Pan American Medical Confederation as representative of the medical association of the United States.

In the official declaration of the incorporation of the American Medical Association with the Pan American Medical Confederation any particular reservation could be made, utilizing the diplomatic system of the International Convention.

The incorporation of the American Medical Association would make the Pan American Medical Confederation very happy and the Confederation hopes that you will appoint some outstanding representative physician of the United States for the position of head of the Region (United States and Canada), always having in mind that in the meeting of the Secretaryship of the Pan American Medical Confederation this member from the United States will be chosen as a leader of the scientific advisers.

This matter was referred to the Reference Committee on Medical Education.

It was moved by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, that the House go into Executive Session, and the motion was seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried after discussion.

Dr. Herbert P. Ramsey, District of Columbia, moved that, as in recent years, the Executive Sessions should include officers of state medical associations, members of the American Medical Association, executive secretaries of state medical societies and editors of state medical journals, and the motion was seconded by several and, after discussion, was lost.

The House convened in Executive Session at 4:15 p. m. and resumed regular session at 5:15 p. m.

Resolution on Establishment of Committee on Public Relations

In Executive Session Dr. Allen H. Bunce, Georgia, presented the following resolution, which was referred to the Reference Committee on Legislation and Public Relations:

Resolved, That a Committee on Public Relations be established in the headquarters office, composed of the Secretry and General Manager, the resident Trustee and the Editor of THE JOURNAL, which shall have charge of the public relations of the American Medical Association under the general direction of the Board of Trustees.

Report from Hawaii

There was also presented in Executive Session a report from Hawaii, which was referred to the Reference Committee on Legislation and Public Relations.

Resolution on Limitation of Tenure of Office of Delegates

Dr. Theodore H. Harwood, Vermont, presented the following resolution, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws, which was requested to consult with the Judicial Council:

WHEREAS, Constantly changing social and economic conditions require that those who establish the policies of the American Medical Association be familiar with needs of the active generation and be capable of rapid adjustments and decisions; and

WHEREAS, It has been amply demonstrated in the recent war that young physicians are fully capable of undertaking great responsibility; and

WHEREAS, The American Medical Association and many of its constituent state associations have already recognized both this principle and the value of constant injection of new ideas in their higher offices by limiting tenure in the Board of Trustees and in the Councils; now therefore be it

Resolved, By the House of Delegates of the American Medical Association that the principle of limitation of tenure of office be extended to members of this House of Delegates and that the Committee to Study Revision of the Constitution and By-Laws be and is hereby instructed to prepare suitable amendments to implement this policy.

Supplementary Report of Council on Medical Service

Dr. James R. McVay, Vice Chairman, presented the following supplementary report of the Council on Medical Service, which was referred to the Reference Committee on Miscellaneous Business:

PLANNING FOR THE CHRONICALLY ILL

Early this spring the Board of Trustees referred a statement on "Planning for the Chronically Ill" to the Council on Medical Service with the suggestion that the Council select an Advisory Committee to assist Dr. James R. Miller in studying this statement.

The Council submitted four names to the Board of Trustees to act as an Advisory Committee in assisting Dr. Miller. This committee was approved by the Board of Trustees.

The statement "Planning for the Chronically Ill" was prepared as a joint statement of and to be released by the American Hospital Association, American Public Health Association, American Public Welfare Association and American Medical Association. Primarily, it is a recognition of the problems of chronic illness and an attempt to provide a useful guide and stimulus to those interested in planning for the chronically ill.

The Council on Medical Service commends Dr. Miller and others responsible for drawing up the statement and suggests to the House of Delegates that it be approved as a preliminary statement concerning the problems of the chronically ill, and that Dr. James R. Miller and the Advisory Committee be authorized to proceed further in investigating and evaluating these problems.

Respectfully submitted,

E. J. MCCORMICK, Chairman.	ROGER I. LEE.
R. L. ZECH.	H. H. SHOULDERS.
JAMES R. MCVAY.	LOUIS H. BAUER.
A. W. ADSON.	GEORGE F. LULL.
WALTER B. MARTIN.	THOMAS A. HENDRICKS,
THOMAS A. MCGOLDRICK.	Secretary.

Dr. Roy B. Henline, Section on Urology, moved that the House recess until 2 o'clock Wednesday afternoon, June 11. The motion was seconded by several and carried, and the meeting recessed at 5:45 p. m. to reconvene at 2 p. m., Wednesday, June 11.

Third Meeting—Wednesday, June 11

The House reconvened at 2:15 p. m., Wednesday, June 11, 1947, with the Speaker, Dr. R. W. Fouts, presiding.

Introduction of Invited Foreign Guests

Dr. Morris Fishbein, Editor of THE JOURNAL, presented Dr. Tauno Putkonen, representing the government of Finland, who addressed the House (a copy of this address is not at present available).

Dr. Fishbein showed the special document from the Finnish Medical Association and then presented Dr. Rolf Bergman, representing the Swedish government, and Dr. Sven Forssman, a noted authority on industrial health, representing the Swedish Medical Association.

Hon. T. Lindsay, representing the United Kingdom, was introduced and spoke as follows:

I think I should just mention that I am exhibit A, I am not a doctor, I am a specimen of the bureaucrats to which the British Medical Association is subjected, and we are such good friends that you may ask Dr. Dain and Dr. Charles Hill whether they have any objections to me.

Dr. Morris Fishbein, then presented Dr. José J. Centurion, professor of internal medicine in the University of Havana, Cuba, representing the university, who spoke as follows:

Havana is following with great interest the great meetings you are having here. In the name of the faculty, they send best regards to you all and hope that Cuba, with the university, will be following the United States in all these events.

Dr. E. Torab Mehra, representative of the government of Iran, was then presented and addressed the House as follows:

If you will forgive me, I should like to say that this is a great personal honor and privilege to represent my government and the physicians of Iran before you distinguished gentlemen here. I know that your time is very valuable. I should just like to say a few words concerning the physicians of Irán.

I have been fortunate enough to come to this country and become educated in this country, so I well know what the American Medical Association has done to raise the standard of medical care in this country. I should like to mention to you that from now on the duty of the American Medical Association is

more than in this country; it has passed the boundaries and is more or less international. The people of my country look to America at the present time as the leader, and we follow your steps in every respect.

We hope that in the future we shall raise the standard of health in our country, and that will be possible only with your help and assistance. I would just like to suggest several things that you distinguished gentlemen could do for the people of the Near East and Iranians in particular. One would be to open up the doors of your schools to more Iranian students. I have come here and I know how difficult it is to get admitted to American medical schools. Dr. Weiskotten can tell you how much difficulty I had when I went to Syracuse University to stay. Whatever I say to you is right out of my heart, and I mention this fact to you because it is extremely important.

Secondly, because of our foreign exchange, you gentlemen have to put up some kind of scholarship for the working students who come to this country and want to study here so they should not have to spend the time, when they should be studying anatomy, washing dishes and doing other work to use up their time.

I believe that is all that has been in my heart for the past twelve years in this country and I hoped that some time I could stand up before you and tell you, though it may be very inadequate.

Roll Call

A motion was made by Dr. Arthur J. Bedell, Section on Ophthalmology, seconded by Dr. Thomas S. Cullen, Maryland, and carried, that the registration be considered the roll call.

Report of Reference Committee on Credentials

Dr. G. Henry Mundt, chairman, announced that 173 delegates had registered.

Report of Reference Committee on Medical Education

Dr. George W. Kosmak, Chairman, presented the following report, which on motions of Dr. Kosmak, duly seconded and carried, was adopted section by section and as a whole, with the exception of the report of the reference committee on the Resolution on the Nursing Shortage, which was laid on the table on motion of Dr. James R. Reuling, New York, seconded by several and carried:

1. Report of Council on Medical Education and Hospitals: Your reference committee has studied the report of the Council on Medical Education and Hospitals as published in the Handbook and recommends also that every member of the House study this report carefully. Your committee commends the Council for the complete and conscientious report on the problems relating to the reconversion of medical education from a wartime to a peacetime basis and wishes especially to commend the excellent work in providing opportunities for residency training desired by returning medical officers. It is gratifying also to note that plans are under way by the Council for a comprehensive resurvey of all medical schools and all aspects of medical education, including the financing of medical education, the teaching of medical economics and the social aspects of medicine, of public health, of preventive medicine and of other components of the medical school curriculum.

2. Supplementary Report of Council on Medical Education and Hospitals: The supplementary report of the Council, dealing with hospital staff appointments and with the problem of the general practice of medicine and recommending that sections on general practice be established in hospitals, was referred to the Reference Committee on General Medical Practice except for one portion of the supplementary report dealing with a change in the "Essentials of a Registered Hospital."

Your reference committee recommends that the wording of section 3, paragraph 6, dealing with the staff organization of a hospital be changed to read as follows: "6. Staff sections, such as medicine, obstetrics, surgery, general practice, etc., should be organized as may seem wise."

3. Supplementary Report of the Council on Medical Education and Hospitals: The supplementary report of the Council revising the "Essentials of Approved Residencies and Fellowships" is recommended for approval.

4. Resolution on Need of a Greater Income for Medical Schools: Your reference committee finds that the Council is planning to include a study of the financing of medical education in its survey of medical schools.

Your committee recommends that the resolution be referred to the Council on Medical Education and Hospitals for study in connection with the resurvey of medical schools.

5. Resolutions on Indoctrinating Medical Students with Philosophy and Ethics of Profession: Your committee finds that the Bureau of Medical Economic Research, in collaboration with the Council on Medical Education and Hospitals, is surveying the instruction of medical students in this field and will prepare a syllabus with pertinent information and reading references in the general field of medical economics and the social aspects of medicine for use in the instruction of medical students and interns.

Your committee recommends that these resolutions be referred to the Council on Medical Education and Hospitals as a guide to efforts in this direction.

6. Resolutions on Hospital-Specialty Board Relationships: Your reference committee wishes to call attention to the supplementary report which the Council has made to this house regarding hospital staff appointments as related to specialty certification. In that report the Council stressed the principle that hospital staff appointments should be made on the basis of ability and merit and not on specialty board certification or membership in special societies.

Your reference committee recommends that these resolutions be referred to the Council on Medical Education and Hospitals.

7. Resolutions on Teaching of Medical Economics in Medical Schools: Your committee finds that the Bureau of Medical Economic Research in collaboration with the Council on Medical Education and Hospitals is surveying the instruction of medical students in this field and will prepare a syllabus with pertinent information and reading references in the general field of medical economics and the social aspects of medicine for use in the instruction of medical students and interns.

Your committee recommends that these resolutions be referred to the Council on Medical Education and Hospitals as a guide to efforts in this direction.

8. Communication on Pan American Organization: Your reference committee recommends that this communication, referring to the desirability of establishing a Pan American organization of physicians, be referred to the Board of Trustees for appropriate action.

9. Resolutions on Training of Medical Students to Administer Programs of Health and Medical Services in Schools and in Industry: Your committee recommends adoption of these resolutions with the elimination of the last paragraph.

10. Resolution on Nursing Shortage: Your reference committee recommends adoption of this resolution, urging the establishment of training programs for practical nurses.

Respectfully submitted,

GEORGE W. KOSMAK, Chairman.
JOSEPH D. MCCARTHY.
THOMAS S. CULLEN.
WILLIAM D. STOVALL.
A. W. ADSON.

Report of Reference Committee on Legislation and Public Relations

Dr. Thomas P. Murdock, Chairman, presented the following report, which, on motions of Dr. Murdock, duly seconded and carried after discussion, was adopted section by section and as a whole with the exception of the report of the committee dealing with the Resolution on S. 140, with the Resolution on Effective Program of Public Relations and with the Resolution on Establishment of Committee on Public Relations, which were rereferred to the reference committee:

1. Resolutions on Hospital Competition with Private Practice: Your reference committee has carefully considered these resolutions and recommends that no action be taken because these resolutions in general were covered by a more comprehensive resolution submitted by the West Virginia delegate and approved by this House of Delegates.

2. Resolution Requesting Discontinuance of Notorization of Declaration of Narcotics in Hand to Accompanying Renewal of Stamps: Your reference committee recommends approval of this resolution.

3. Resolution on Medical Care of Dependents of Service Men: Your reference committee recommends disapproval of these resolutions.

4. Resolutions on S. 140: Your reference committee recommends the addition to these resolutions as follows: "and be it further *Resolved*, That the House of Delegates go on record expressing its disapproval of any bill combining health, education and welfare."

5. Resolution on Group Practice: Your reference committee has given careful consideration to this resolution and calls to your attention that the Judicial Council included the question of group practice in its report and that a study is now under way by the Bureau of Medical Economic Research.

Therefore, your committee presents the following substitute resolutions:

Resolved, That the House of Delegates go on record approving a study of the question of group practice; and be it further

Resolved, That this matter be referred to the Board of Trustees with the suggestion that it be referred to the Bureau of Medical Economic Research, the Judicial Council, the Council on Medical Service and the Bureau of Legal Medicine and Legislation.

6. Report of Judicial Council: Your reference committee has carefully reviewed the report of the Judicial Council as it appeared in the Handbook, which covered the activities of the Council since the midwinter meeting in December.

Two formal meetings were held and the usual routine work was reported. This work included consideration of questionable eligibility of applicants for Fellowship, recommendation of candidates for Associate Fellowship and many decisions on the ethics of practice.

The Council reported many requests for information or approval by ophthalmologists.

The Council report includes the report of Dr. A. C. Ivy as a representative of the government of the United States in which the war crimes of a medical nature were reviewed.

The report explains the duties of the Council as distinguished from the duties of the House of Delegates and state associations. Included in the report also are studies of group practice and voluntary insurance plans.

It can be said that the Council has had a busy year and has done its work well.

7. Resolutions on Effective Program of Public Relations and Resolution on Establishment of Committee on Public Relations: Your reference committee recommends adoption of the following resolutions as a substitute for those introduced:

WHEREAS, The House of Delegates has authorized and endorsed an effective program of public relations for the American medical profession; and

WHEREAS, The American Medical Association is the only organization which is qualified to speak with authority for American medicine; be it therefore

Resolved, That a Committee on Public Relations be established in the headquarters office composed of the Secretary and General Manager, the resident Trustee and the Editor of THE JOURNAL, which shall have charge of the public relations of the American Medical Association under the general direction of the Board of Trustees; and be it further

Resolved, That if the Board of Trustees is convinced that the Association cannot afford to carry out a public relations program, Fellowship dues be increased to $10 per annum.

8. Report from Hawaii: Your reference committee has reviewed the report from and has heard the delegate of the Hawaii Territorial Medical Association. This report had to do with the presentation of a bill in the Territorial Legislature in an attempt to socialize medicine. This resulted in the unification of medical forces. A press, radio and letter campaign was conducted which was successful and the bill died in committee. The delegate brought out that the National Physicians Committee was of great help in the defeat of the bill. The delegate was of the opinion that the bill was inspired and promulgated by Communists.

As a result of this report and the testimony of the delegate, your reference committee presents the following resolutions: be it

Resolved, That the House of Delegates of the American Medical Association congratulate the Hawaii Territorial Medical Association; and be it further

Resolved, That the House of Delegates recognize that a similar situation exists on this continent; and be it further

Resolved, That the House of Delegates of the American Medical Association continue its eternal vigilance and its fight against the forces which are trying to destroy the medical way of life by attacking the "soft underbelly" of the American people—American medicine.

Respectfully submitted,

THOMAS P. MURDOCK, Chairman
THOMAS A. MCGOLDRICK.
WILLIAM M. SKIPP.
LLOYD NOLAND.
FORREST J. PINKERTON.

Report of Reference Committee on Hygiene and Public Health

Dr. Walter E. Vest, Chairman, presented a report, which as amended reads:

1. Report of Committee on Rural Medical Service: Your Reference Committee on Hygiene and Public Health met June 9, immediately following adjournment of the House, and considered the report of the Committee on Rural Medical Service. Your committee feels that the highest commendation is due that committee for the work it has accomplished thus far. Obviously adequate rural medical care is, in many areas, an unsolved problem. Your committee recommends that committees on rural medical service should be set up in those state medical associations not now having them and suggests that the headquarters office should urge on all the state associations the necessity for adequate support of these committees. The development of adequate medical care in much of rural America will of necessity be a long and difficult task and will require time, patience and persistence.

Your committee believes that the development of rural health councils is distinctly in order and that such councils should be actively participated in by the practicing physicians and essentially guided by them. Likewise your committee approves news releases pertaining to health by such rural health councils and farm publications as may from time to time seem pertinent and recommends also that leaflets on preventive medicine and rural medical service issued by the American Medical Association should be distributed to these organizations. Your committee further urges on the Board of Trustees adequate financial support of the Committee on Rural Medical Service.

2. Resolution on National Health Policy: Your committee considered also the resolution which is apparently the plan now operating in Monmouth County, New Jersey.

Your committee approves the resolution in general and recommends that principles 1 and 2 be adopted as presented. However, it is the opinion of your committee that principle 3 as submitted might be at times embarrassing. Hence it is its recommendation that this principle be rewritten as follows:

"3. Each component society invites and welcomes the active participation in its scientific programs by the qualified medical personnel of the appropriate health and welfare agencies and, under suitable circumstances, of the nonmedical personnel as well." Approval of the remaining principles as set forth in the resolution is recommended except that your committee recommends the clarification of 7 by insertion of the word "economically" before the word "suitable" so that this principle will read:

"7. The health and welfare agencies will protect the private practitioner and family doctor by discouraging treatment in preventive clinics by returning to the family doctors any cases not economically suitable for examination or care at the health or welfare agency."

Respectfully submitted,

WALTER E. VEST, Chairman.
JAMES P. WALL.
WALTER P. ANDERTON.
LEONCE J. KOSMINSKY.
JAMES A. CRABTREE.

The first section of the report of the reference committee was adopted on motion of Dr. Vest, seconded by Dr. C. F. Strosnider, North Carolina, and carried after a motion by Dr. F. S. Crockett, Indiana, seconded by several, to include the words "farm publications" in connection with news releases was carried.

Dr. Vest moved adoption of the second section of the report of the reference committee, referring to the Resolution on National Health Policy, and the motion was seconded by several. After discussion and suggested amendments, this matter was rereferred to the reference committee on motion of Dr. E. S. Hamilton, Illinois, seconded by Dr. J. Stanley Kenney, New York, and carried.

On motion of Dr. Vest, seconded by several and carried, the report of the reference committee was adopted as a whole with the exception of the second section, which had been rereferred to the committee.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. B. E. Pickett Sr., Chairman, presented the following report, which was adopted on motion of Dr. Pickett, seconded by Dr. Robert E. Schlueter, Missouri, and carried:

Resolution on Limitation of Tenure of Office of Delegates: Your reference committee gave due consideration to and discussed with the members of the Judicial Council this resolution and agrees that the resolution may have merit, but it believes that the resolution interferes with the prerogatives of the individual constituent associations and sections of the Scientific Assembly. Therefore your committee recommends disapproval of the resolution.

This report was concurred in by members of the Judicial Council present.

Respectfully submitted,

BRITTON E. PICKETT SR., Chairman.
L. G. CHRISTIAN.
ALLEN H. BUNCE.
HOMER LEE PEARSON JR.
ALFRED S. GIORDANO.

Report of Reference Committee on Reports of Officers

Dr. James R. Reuling, Chairman, presented a report, which as amended reads as follows:

Your reference committee, before taking up the individual reports of the officers, wishes to call the attention of this House of Delegates to the fact that at the opening session of this, our Centennial Celebration, we were privileged to listen to three of the finest addresses that any House has ever heard. Because these addresses contain so many valuable recommendations—suggestions and recommendations that may well set the pattern for the next one hundred years—your committee has had duties far beyond those which usually fall to the Reference Committee on Reports of Officers.

ADDRESS OF THE SPEAKER

The Speaker's address, brief and to the point, reflects his wisdom as Speaker and his judicial mind as a presiding officer. After reviewing the history of the establishment of the position of Speaker of the House and paying tribute to his predecessors, he wisely called attention to a provision in the proposed new By-Laws, regarding the composition of the House during executive sessions. As this House has taken no action on the revision of the Constitution and By-Laws during this session, your reference committee makes the recommendation that only members of the House of Delegates as defined in article 5, section 2, and the general officers as defined in article 6, section 1, of the present Constitution and By-Laws shall be present at an executive session. The House, by a two-thirds majority may, however, invite to be present any individual who in its judgment might assist in the deliberations.

Your reference committee would commend the Speaker for the excellent manner in which he has conducted this important office.

ADDRESS OF THE PRESIDENT

The committee listened with deep interest to President Shoulders and has reread his address with much profit. He points with great clarity to the fact that while changes have taken place in the practice of medicine, the philosophy, the fundamental principles of medicine, do not change.

1. Increasing Availability of Services of General Practitioners: Dr. Shoulders says "It is apparent that the immediate and most urgent needs are concerned with increasing the availability of the services of general practitioners." Your committee believes that the specialty boards have unwittingly contributed to the unwholesome flow of medical students and interns away from general practice and into the specialties and agrees "that the graduate training given in most hospitals approved for the training of interns and residents is designed to satisfy the requirements of specialty boards rather than to meet the needs of general practitioners." Your committee believes that the medical schools also contribute to this state of affairs in that student training is constantly being directed toward the specialties and believes also that the medical schools and the medical boards of all hospitals should pay more attention to the art of the practice of medicine.

Faculties of medical schools and staffs of hospitals should themselves be indoctrinated with the fact that the general practitioner or family doctor is the backbone of the medical profession. They should reiterate to the medical students what Dr. Shoulders has so ably stated concerning the position of the general practitioner in his community and the many rewards for being a family physician.

Dr. Shoulders makes the following recommendations: "That this House of Delegates take action to request the Board of Trustees to appoint and finance a special committee of whatever size is deemed necessary for the purpose of studying all the factors which affect the production and distribution of the type and quality of medical care which the people need and/or desire. In particular, such a committee could (1) define the term 'general practitioner,' or 'general physician,' on a functional basis; (2) determine whether or not there is need for a large increase in the number of medical graduates and, if so, its extent; (3) study the present program of medical education and training, both undergraduate and postgraduate, to determine whether or not the content and administration of the program is properly adjusted to the present day needs of the people; (4) study the possibility and feasibility of utilizing smaller community hospitals in a program for the training of general practitioners and the possibility of approving such institutions for training when a program is properly organized and administered; (5) study the means by which communities in need of additional services may be aided; (6) study such other questions as the committee itself may deem to be necessary at arriving at sound conclusions concerning the entire field of medicine, and (7) propose a long range program designed to overcome present insufficiencies and to meet future needs."

Your reference committee is aware that each of these recommendations is and has been under study by the Council on Medical Education and Hospitals. Such material as has been assembled should be utilized. However, your committee is convinced of the necessity of such a special committee and recommends that a special committee be appointed, the committee to contain a number of general practitioners and to study intensively these seven points and make periodic reports to the House of Delegates.

2. Your committee would direct the attention of every doctor in the United States to the masterful way in which President Shoulders has dramatized the economic changes which have taken place—his similes as to why the cost of medical care seems to have increased should be memorized when he says "When appendicitis was treated largely by the administration of opium pills and the application of poultices to the abdomen, the cost of administering such treatment was low but the resulting mortality was high." . . . "When diabetes was treated by diet and the administration of codiene, the cost of such treatment was low but the mortality was high." He should have added that these individuals and those suffering from many other conditions saved from an early death by the advances of medical science increase the national economy and thereby do not relatively increase the cost of medical care.

ADDRESS OF THE PRESIDENT-ELECT

1. Supplemental Session of House of Delegates to Include Scientific Meeting: The address of President-Elect Bortz contained illuminating discussion and forward looking recommendations. The Association is indeed fortunate in having had Dr. Bortz as Vice President when Dr. Olin West found it imperative to resign.

The first problem which Dr. Bortz presented contained two parts: (1) having a scientific meeting for general practitioners in conjunction with the supplemental session of the House of Delegates and (2) that the supplemental session be rotated to various sections of the country.

Your committee is in hearty accord with these proposals. It forsees in this plan (1) enormous public relations value; (2) raising the general practitioner to the eminence which he deserves in his local community, and (3) educating the headquarters office to local needs, conditions and problems.

Your committee recommends that the supplemental session of the House of Delegates be held in various sections of the country and that there be scientific meetings at these sessions devoted to the general practice of medicine.

2. Affiliation of Medical Students: Your committee agrees with Dr. Bortz in the necessity of securing the closer affiliation of the third and fourth year medical students with the American Medical Association. The committee recommends that the officers of the Association and the appropriate councils carry out his proposals of Affiliate Membership and the reestablishment of a student section in THE JOURNAL. Your committee further recommends that the Secretary, in collaboration with the councils and bureaus, prepare an illustrated booklet which will contain a description of the various activities carried on by the American Medical Association and that this booklet be distributed to the members of the Association and to all third and fourth year medical students.

3. Qualified Spokesmen: Your committee recognizes the problem of obtaining a greater number of well qualified speakers. It recommends that the Council on Medical Service assist in the establishment of a speakers' training program in every county medical society. Your committee believes that the Council on Medical Service should bring all of its pamphlets up to date. Recognizing the limitations of physicians in preparing properly coordinated talks, it also recommends that a number of basic speeches be prepared for distribution through the speakers' bureau.

4. The Woman's Auxiliary: Your reference committee concurs in the opinion that the value of the Woman's Auxiliary has been for the most part overlooked in many counties and states. On the other hand, many counties and states know full well the potent public relations value of their auxiliaries. Your committee would have every county and state medical society urge its auxiliary to make use of available material at the headquarters office.

5. The Nursing Crisis: Your committee recognizes this serious situation. It feels that in recent years too much stress has been laid on the technical and scientific preparation of the prospective student nurse rather than on her sympathetic understanding of the problem of patient handling, comfort and ordinary technics of treatment. It recommends that the President appoint a committee of five to be known as the Committee on Nursing Problems. This committee shall investigate the present objectives of the nursing profession, the standards of education, the time involved for training, the various curriculums, the supply of nurses and quality of services rendered, remuneration, participation in the determination of administrative policies and the question of security benefits and to study the training of practical nurses.

6. Medical Preparedness: Your committee feels that this is of the utmost and urgent importance and should be followed up as of today instead of filing away for future disposition.

7. A New Home for the American Medical Association: Dr. Bortz in his address said "The House of Delegates must take under advisement a building program." Your committee after consultation with various individuals believes this matter to be urgent and recommends that the Board of Trustees be empowered to study these needs and take appropriate action.

Respectfully submitted,

JAMES R. REULING, Chairman.
JAMES Q. GRAVES.
WILLIAM H. HALLEY.
E. N. ROBERTS.
DEERING G. SMITH.

It was moved by Dr. Reuling and seconded by several that the first section of the report of the reference committee, dealing with the address of the Speaker concerning attendance at an executive session of the House, be adopted. After proposed amendments, the Chairman accepted the revision of the last sentence so that it reads as it is now contained in the report.

On motion of Dr. Reuling, seconded by Dr. C. F. Strosnider, North Carolina, and carried, the report of the reference committee referring to the address of the President was adopted.

Dr. Reuling moved adoption of the first section of the report of the reference committee dealing with the address of the President-Elect referring to supplemental sessions of the House of Delegates, and the motion was seconded by Dr. Charles R. Rountree, Oklahoma. After discussion, this section of the report of the reference committee was rereferred to it on motion of Dr. C. B. Conklin, District of Columbia, seconded by Dr. Thomas S. Cullen, Maryland, and carried.

It was moved by Dr. Reuling, seconded by Dr. C. F. Strosnider, North Carolina, and carried, that the second section of the report of the reference committee, referring to the address of the President-Elect, be adopted.

The third section of the report of the reference committee, dealing with the address of the President-Elect, was adopted on motion of Dr. Reuling, duly seconded and carried after discussion.

Sections 4 and 5 of the report of the reference committee, referring to the Woman's Auxiliary and the nursing crisis contained in the address of the President-Elect, were adopted as amended on motion of Dr. Reuling, seconded by several and carried after discussion.

The seventh section of the report of the reference committee, relating to a new home for the American Medical Association, referred to in the address of the President-Elect, was adopted on motion of Dr. Reuling, seconded by Dr. Walter E. Vest, West Virginia, and carried.

On motion of Dr. Reuling, seconded by Dr. L. J. Kosminsky, Arkansas, and carried, the report of the reference committee as amended, with the exception of the portion that was rereferred to the reference committee, was adopted as a whole.

Report of Reference Committee on Medical Education

Dr. George W. Kosmak, Chairman, presented the following report:

1. Resolution on the Nursing Shortage. Your reference committee desires to bring up for consideration at this time the Resolution on the Nursing Shortage, which had been laid on the table.

2. Your Reference Committee on Medical Education desires to report its recommendations on two additional resolutions, which, although they were included in the material handed in, were not read in our earlier report to the House of Delegates.

(*a*) Resolution on Allotment of Residencies: Your reference committee feels that whatever the merits of these resolutions may be, it would not be possible for any organization to enforce the proposal to compel hospitals to reserve one half of their residencies for physicians who have had five years' experience in general practice. Your committee therefore, recommends that these resolutions be not approved.

(*b*) Resolution on Hospital Standardization: Your reference committee finds that the Council on Medical Education and Hospitals is collaborating with all interested agencies in reviewing hospital standards, so that this resolution is in accord with activities now under way. Your committee recommends that this resolution be referred to the Council on Medical Education and Hospitals for its guidance in its collaborative activities with other accrediting organizations.

On motion of Dr. T. K. Gruber, Michigan, duly seconded and carried, the Resolution on the Nursing Shortage was taken from the table.

Dr. Kosmak moved adoption of the resolution as introduced and the motion was seconded by Dr. Wingate M. Johnson, North Carolina. After discussion and after a motion to rerefer to the committee was lost, another motion to rerefer the matter

to the reference committee, made by Dr. T. K. Gruber, Michigan, seconded by Dr. Walter E. Vest, West Virginia, and carried, was adopted and this resolution was rereferred to the reference committee.

Section 2 (*a*) of the report of the reference committee, disapproving of the Resolutions on Allotment of Residencies, was adopted on motion of Dr. Kosmak, seconded by several and carried.

It was moved by Dr. Kosmak, seconded by Dr. Thomas S. Cullen, Maryland, and carried, that section 2 (*b*) of the report of the reference committee, referring the resolution to the Council on Medical Education and Hospitals, be adopted.

On motion of Dr. Kosmak, seconded by several and carried, the report of the reference committee, with the exception of the first section that was rereferred to it, was adopted as a whole.

Report of Reference Committee on Reports of Officers

Dr. James R. Reuling, Chairman, presented a report, which as amended reads as follows:

Supplemental Session of the House of Delegates to Include Scientific Meeting: Your committee recommends that the annual supplemental session of the House of Delegates be held in various sections of the country and that this supplemental session be preceded or followed by a scientific session devoted exclusively to the general practitioner, and that the arrangements for such sessions be under the joint auspices of the Board of Trustees and the Council on Scientific Assembly.

On motion of Dr. Reuling, seconded by Dr. Charles R. Rowntree, Oklahoma, and carried after amendment to the report had been adopted, the report of the reference committee was adopted.

Report of Reference Committee on Reports of Board of Trustees and Secretary

Dr. Elmer Hess, Chairman, presented the following report of the reference committee, which was adopted section by section and as a whole on motions of Dr. Hess, duly seconded and carried:

REPORT OF SECRETARY

1. Growth of American Medical Association: Your reference committee compliments the Secretary on his very substantial increase in membership, and with the cooperation of the state secretaries and the editors who have been influenced by his leadership.

2. Specialty Boards: Only two resolutions were referred to the Secretary, and one of these concerned changes in the requirements of specialty boards. These were referred to the proper reference committees. Your reference committee wishes to emphasize the necessity for a change in the policy of these boards.

3. Secretary's News Letter in Report of Executive Assistant: This is a step in the right direction, and the information contained in this News Letter has kept before the various medical leaders in the states and counties information of extreme value and should be continued. Comment on the information contained in the News Letter, whether critical or favorable, is welcomed. Your reference committee strongly advises the continuation of efforts for coordination of the public relations activities at headquarters and believes that the efforts made to channel back to the states and county societies is invaluable. The committee recommends that this service be enlarged and that the information be available to other organizations interested in medical affairs.

4. Promotion for Council on Medical Service in Report of Executive Assistant: Your reference committee recommends that this effort should be continued and requests that new prepayment medical service plans be given the experience of the older plans on an actuarial basis.

5. Press Section in Report of Executive Assistant: Frequently information is given to the press before that information is available to the practicing physician. Your reference committee recommends that information released to the press as new be simultaneously channeled to the profession. This will prevent the embarrassment of the physician when questioned by the laity concerning such news releases. Your committee realizes that this is difficult and it believes that a splendid contribution to public relations has been made by these news releases.

6. Appreciation: Your reference committee wishes to express its appreciation to the Board of Trustees for its foresight in obtaining as Secretary a man of the caliber of Dr. George F. Lull. It believes that under his leadership and with his experience the affairs of his office could be in no better hands.

7. Office of Executive Assistant: Your reference committee notes with deep satisfaction that this office is temporarily unfilled. It realizes the value of the office and hopes that proper personnel may soon be employed to the satisfaction of the medical profession. The Secretary and General Manager needs efficient assistance from this department.

Respectfully submitted,

ELMER HESS, Chairman.
THOMAS F. THORNTON.
ALLEN G. RICE.
ALBERT A. GARTNER.
THEODORE H. HARWOOD.

Report of Reference Committee on Miscellaneous Business

Dr. James Z. Appel, Pennsylvania, presented the following report, which was adopted section by section and as a whole on motions of Dr. Appel, duly seconded and carried after discussion:

1. Resolutions on Placing Statue of Dr. William Crawford Gorgas in New York University Hall of Fame, for Great Americans: The work of Dr. Gorgas speaks for itself. Its far reaching effect on the health of humanity the world over has been particularly brought home to us during World War II. Your committee therefore believes that the provision of these resolutions should be carried out and recommends their adoption.

2. Resolution on Deductible Items for Federal Income Tax Purposes: Your reference committee recommends the adoption of this resolution.

3. Resolution on News Releases of American Medical Association: After consulting with the Editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, your committee has learned that THE JOURNAL is mailed each Wednesday. The Postoffice Department insists that the periodical go on sale at news stands the same date it is mailed. Thus it is impossible to control the date of news releases, particularly since the date THE JOURNAL is received by physicians varies from Friday to the Wednesday following the mailing date. Your committee therefore recommends that this resolution be not adopted.

4. Resolution on Clarification of Rules Relating to Medical Service Fees Received from the Federal Government: Your committee recognizes that with the gradual extension of government into fields of medicine with the promulgation of various rules, regulations and directives of the various bureaus, agencies and commissions, there will be great confusion and inconsistencies. It will be of great advantage to both government and medicine if this matter can be clarified as provided in the resolution. Your committee recommends the adoption of this resolution.

5. Report of the Committee on Military Rank: Since the objectives of this committee have been realized or are in process of realization, your committee recommends that the report be adopted and that the committee be discharged with the thanks of the American Medical Association.

6. Resolution on Increasing Pay of Medical Officers in the Several Services: The provisions of this resolution present no controversial problems. Its sentiments are endorsed by all. Your committee recommends adoption of the resolution.

7. Resolution on Treatment of Plastics for X-Ray Visualization: Your committee is in sympathy with the objectives of this resolution but it does not wish its action to be construed as an instruction to the legislative committee. With this in mind, your committee recommends the adoption of the resolution.

8. Report of Joint Committee for the Coordination of Medical Activities: Your reference committee believes that the work of this committee in acting as a liaison with all medical services is invaluable. It strongly urges that the committee continue to function and recommends the adoption of the report.

9. Resolution on Dissemination of Information Pertaining to Matters of Public Health: After careful study of this

resolution and the hearing of testimony from various members of the Section on Ophthalmology in which no favorable comment was obtained, your committee believes that the provisions of this resolution contain too many broad implications for this House of Delegates to accept. It therefore recommends that this resolution be not adopted.

10. Resolutions on Rebates: The fact that accepting rebates by ophthalmologists has year after year been declared unethical by the Judicial Council and such declaration has been approved by each House of Delegates to which the Council reported, it seems convincing evidence that the House of Delegates frowns on this practice. Furthermore, at this very session of the House of Delegates, you have approved a most forceful enunciation of this principle in the present report of the Judicial Council. Your reference committee can only reaffirm this principle and recommend that it be adopted.

Your reference committee, however, believes that the American Medical Association should not "request" constituent societies to expel members under any circumstances. This procedure is suggestive of and might be interpreted as dictatorship. It therefore, with the approval of the author of these resolutions, has amended them so that the last paragraph shall read: *"Resolved,* That the Secretary of the American Medical Association communicate this action to the various county societies forming the constituent associations and advise them again that members accepting rebates are violating our Principles of Medical Ethics and recommend that each component society take appropriate action whenever this situation exists."

It further amends these resolutions, without the knowledge of their author, that another "resolved" be added to it as follows: *"Resolved,* That the Board of Trustees of the American Medical Association appoint a committee to investigate all phases of this subject, including the alleged arbitrary control of the retail price of optical appliances by manufacturers, which committee is to report its findings to the House of Delegates at the next supplemental session."

In conclusion, your committee believes that the Section on Ophthalmology of the American Medical Association could and should stop this practice.

11. Resolutions on Safety in Flying: Your reference committee recognizes the dangers involved in the action of the Civil Aeronautics Administration by lowering the physical standards for private and student pilots and by permitting persons other than doctors of medicine to make these examinations. Even so soon after a great war, in which many physicians were well trained in aviation medicine, there are sections of the country in which it might be difficult to find such a trained doctor of medicine. It therefore recommends the adoption of these resolutions with a change made in the second "resolve" of the resolutions so that it shall read: *"Resolved,* That in the opinion of the Association physical examination of all grades of pilots should be conducted only by those who are doctors of medicine and preferably by such doctors of medicine who have had some training in aviation medicine." Your committee recommends the adoption of these resolutions.

12. Resolution on Care of Veterans: The request involved in this resolution cannot but be endorsed. Your committee is convinced that it is not only the desire of the medical profession but also the wish of the veteran himself that he be given home town medical care. Your committee recommends the adoption of this resolution.

13. Report of the Council on Medical Service: As has become customary, the Council on Medical Service has rendered a splendid report of the exceptionally fine work that it has accomplished the past year for organized medicine. There is very little that your committee can say in comment on this report. However, it does wish to point out the great advance that has been made in prepayment plans, which advance, it feels sure, has been due to the efforts of the Council on Medical Service. Your committee certainly must congratulate the Council on Medical Service for its News Letter. In the report the Council states "the mailing list has continued to increase in size, with the addition not only of physicians but of members of the Woman's Auxiliary, special professional societies and laymen who are interested in medical service activities." Your reference committee believes that this mailing list should continue to expand. Much of the information in the News Letter appears in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, but its conciseness and readability is much better portrayed in the News Letter. Your committee believes that very few of our Fellows read this portion of THE JOURNAL but would read these News Letters if they receive them. It therefore recommends that the House of Delegates investigate the possibility of extending this mailing list to include all Fellows of the American Medical Association, and if this is impossible that at least it be sent to all officers of component county societies. With this thought in mind, your committee recommends the adoption of the report of the Council on Medical Service.

14. Supplementary Report of the Council on Medical Service: The supplementary report of the Council on Medical Service is divided into five parts.

The first part deals with the United Mine Workers Health and Hospital Fund and particularly with the Boone Survey. Your committee agrees thoroughly and recommends that this recommendation be adopted.

The second portion of this report deals with the Veterans Administration Home Town Medical Care Program. Your reference committee believes that the recommendations of this Council will further the aims of the resolution which it has already recommended that you adopt and therefore it recommends the adoption of your Council's recommendations.

The third portion of the report deals with the American Cancer Society program, in which the Council believes that "uniform policies with reference to certain parts of this program should be developed." Your reference committee urges the Council to continue its study of the extent and experience of the programs now in operation and report its findings to the profession.

Cash Sickness Benefits: Your reference committee feels that cash sickness benefits might become a dangerous thing to medicine. It therefore recommends that your council continue its study of such legislative programs and keep the state societies informed of this study so that they will be in a position to meet any possible future legislation.

In that portion of the Council's supplementary report on the Hospital Construction Act the Council submits without comment the report of Dr. Dean F. Smiley on the defuition of a health center. Your reference committee has studied this report and will only burden you with a discussion of its completeness. In his conclusions Dr. Smiley states in part: At least fourteen different functions have been assigned to health centers since 1912. Of these fourteen functions it is recommended that only five (communicable disease control efforts, sanitation, maternal-infant-child hygiene measures, vital statistics and health education) be generally included under the title of Public Health Center as that title is used in the Hospital Survey and Construction Act of 1946, and that first assistance be given to the construction of public health centers as headquarters for county and multicounty public health units rather than to more rural public health centers serving as extensions of the county and multicounty health units.

Your reference committee recommends the adoption of these recommendations as read.

Dr. Smiley further states that in rural communities from 4,000 to 18,000 in need of sick beds but not in position to afford a 50 bed general hospital, community clinics of 10 to 40 beds should be provided by hospital authorities rather than "Public Health and Medical Service Centers" provided by public health authorities.

These community clinics would offer a limited medical and maternity service but would not include major surgery or specialty services.

Your reference committee believes that there should be added to the recommendation of Dr. Smiley the statement "Such community clinics should be so organized and administered that they will not infringe on the private practice of medicine by physicians." Your committee is fearful lest even the term "hospital authorities" rather than "public health authorities" should provide a wedge by which government might enter the private practice of medicine.

Dr. Smiley further stated that, if public health centers are housed in community hospitals or community clinics, it is

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recommended that such centers continue to be administered independently.

With these points in mind as amended by your reference committee, it recommends the adoption of the Smiley report.

Your committee therefore recommends the adoption of the supplementary report of the Council on Medical Service.

Respectfully submitted,

JAMES Z. APPEL, Chairman.
STEPHEN R. MONTEITH.
JOHN W. CLINE.
HUGH P. SMITH.
EDWARD H. MCLEAN.

On motion of Dr. Thomas S. Cullen, Maryland, seconded by Dr. H. B. Everett, Tennessee, and carried, the House reverted to new business.

NEW BUSINESS

It was moved by Dr. T. K. Gruber, Michigan, seconded by several and carried as amended, that the resolutions be read by title and their purpose indicated. The resolutions so presented are printed in full.

Resolutions on Health of the Nation

Dr. T. D. Cunningham, Colorado, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The American Medical Association has often been accused of neglect in performance of its duty regarding the medical care of all of the citizens of the United States; and

WHEREAS, The federal government is currently planning drastic legislative action concerning the health of all of the citizens of this country; and

WHEREAS, The action that is planned by the government, if carried out, would threaten the very foundations of the practice of medicine; and

WHEREAS, The American Medical Association is not now equipped with all of the necessary facts either to combat the criticism leveled against us or to correct our inadequacies or the bad public condition, if such inadequacies or bad condition do exist; now therefore be it

Resolved, By the House of Delegates of the American Medical Association that each state in the United States shall be completely surveyed as to the distribution and adequacy of medical and hospital services and care, such survey to include every county in the United States and to be conducted under the direction of the organized medical profession by such skilled personnel as may be needed; and be it further

Resolved, That each state medical association be requested to report to the Secretary of the American Medical Association not later than July 15, 1947 as to whether or not that association can arrange and finance such survey in its own state, this House of Delegates directing the Board of Trustees of the American Medical Association to offer financial assistance and personnel for the conduct of such surveys in any state in which the state medical association is unable to conduct such survey without assistance; and be it further

Resolved, That such survey shall be conducted forthwith and its complete results reported to this House of Delegates at the supplemental session next ensuing.

Resolution on Retired Members of House of Delegates

Dr. L. G. Christian, on behalf of the Michigan delegation, Dr. Louis A. Buie, Section on Gastro-Enterology and Proctology, Dr. Grover C. Pemberthy, Section on Surgery, General and Abdominal, and Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The House of Delegates of the American Medical Association each year pays tribute in memoriam to those former members of the House of Delegates; and

WHEREAS, There are many former members of this House of Delegates who are now living and who have contributed greatly to American medicine and to the policies of the American Medical Association; therefore be it

Resolved, That the House of Delegates instruct the Secretary of the American Medical Association to send an appropriate letter of greetings to these men with the thanks of the House for their contributions to American medicine and to the American Medical Association.

Resolution on Facilitating Efficiency of Work of House of Delegates

Dr. C. F. Strosnider, North Carolina, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, There is no central point of information concerning the times and places of the meetings of the reference committees; and

WHEREAS, This condition results in confusion which prevents delegates and members of the Association from appearing before committees concerning important resolutions; therefore be it

Resolved, That at future sessions of the House of Delegates of the American Medical Association a central bulletin board containing information including names of committees and hours and places of meetings be established, and that its location be announced by the Speaker of the House of Delegates.

Resolution on Preparation and Presentation of Resolutions

Dr. J. D. McCarthy, Nebraska, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The efficiency of reference committees is decreased and time lost because of the lack of a standard method of preparation and presentation of resolutions; and

WHEREAS, This difficulty could be obviated to a great degree if there were a model to follow; therefore be it

Resolved, That (1) all resolutions be titled; (2) the name of the state medical society or the introducer be appended; (3) six copies be presented at the time the resolution is read so that all members of a reference committee may have a copy to study.

Resolution on Listing Names in Daily Bulletin

Dr. K. S. J. Hohlen, Nebraska, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, The names of the registrants appearing in the *Daily Bulletin* of 1947 are arranged in alphabetical order rather than by states; and

WHEREAS, Such an arrangement makes it more difficult or almost impossible to locate a registrant from his state or locality; therefore be it

Resolved, That the proper authorities be requested to follow the system utilized in former years by publishing the names by states.

Resolutions on Support of the SOS Collection of the Joint Distribution Committee

Dr. W. P. Anderton, New York, on behalf of a member of the Association, presented the following resolutions, which were referred to the Reference Committee on Legislation and Public Relations:

WHEREAS, The problems of reconstruction in Europe are the concern of all Americans and the problems of health are the particular concern of American physicians and surgeons; and

WHEREAS, More than 155 hospitals in D. P. camps, child care centers and other institutions are being serviced by medical teams of the joint distribution committee employing, as far as possible, European doctors, nurses and other technicians; and

WHEREAS, These doctors, nurses and other technicians who survived Nazi persecution are handicapped in their work of ministering to the needs of their shattered people by the appalling lack of equipment and research material; and

WHEREAS, Their own libraries and equipment were destroyed or looted by the Nazis; now therefore be it

Resolved, That the American Medical Association, in session assembled, voice full support of the SOS (Supplies for Overseas Survivors) Collection of the Joint Distribution Committee, major American agency aiding distressed Jews overseas, in their campaign to collect and ship medical texts and journals, equipment and supplies to European doctors; and be it further

Resolved, That this session urge the members of our profession to cooperate wholeheartedly in this campaign and contribute medical texts and journals, particularly those dealing with tuberculosis, anemia, latest methods in surgery and developments in medicine and drugs, and to send such contributions to the national warehouse of SOS at 1539 Troy Avenue, Brooklyn, N. Y.

Telegram from White House

Dr. F. F. Borzell, Vice Speaker, at the request of the Secretary, Dr. George F. Lull, who had been forced to leave the meeting, read the following night letter, receipt of which the Secretary was instructed to acknowledge with the profound thanks of the House, to which the letter had been read:

Washington, D. C., June 10, 1947.

DR. GEORGE F. LULL, Secretary and General Manager,
American Medical Association,
Hotel Traymore,
Atlantic City, N. J.

Following is copy of letter addressed to Dr. Moulders by the President under date of June 5:

Dear Doctor Moulders:

I wish to congratulate the American Medical Association on its one hundredth anniversary and to extend to the medical profession the profound thanks of the American people for

uncounted services rendered by America's doctors in war and peace.

The American genius for technical proficiency flowers nowhere more fully than in the skill of our physicians. Our capacity for organization and broad scale application of science and business methods is nowhere more apparent than in our medical schools, our laboratories, hospitals and clinics, in military and industrial medicine, and in our national, state and local public health services.

No thoughtful citizen, however, can fail to see that in achieving impersonal skills, unparalleled organization and "bigness" we have lost some of the individual and spiritual values which are the essence of our American way of life. Our family doctor has become "American medicine"; our working man, "American labor," and our storekeeper and shoemaker, "American business." In reverse, an equally deadly impersonality transforms "my patient," "my employee" and "my customer" into "the public."

Our traditions and our form of government are the world's greatest hope for individual freedom. This is because of their emphasis on the worth of the individual, his direct participation in public affairs and his freedom to become a whole man, independent in thought and action. Now, as never before, our institutions call on us to hold fast and increase the freedom of every individual for full development and use of his physical and mental powers.

We can never return to the days of the "horse and buggy" doctor; nor would we wish to. Rather, we would go forward with all the benefits of American medicine achieved and those to come. Into our methods of distributing these benefits we would infuse the personal devotion which has always been the beloved characteristic of the good physician. If every doctor will project his individual concern and care to a larger view of the needs of his colleagues and of all the people, there will be no doubt of the future growth and social value of medicine in this hazardous era which ushers in the second century of your organization.

The medical profession has been a primary leadership group in the national scene and the local community throughout this country's history. It is my hope that our physicians will give still more thought and participation as citizens to the solution of our modern problems. The problems most directly affecting their profession will claim their first attention; these include the advancement of scientific knowledge, improvement and expansion of professional training, and the extension of medical and health services. We need them also in the solution of such related problems as nutrition, housing, conditions of work, use of leisure time and other economics and environmental factors affecting health. Fortunately, physicians have, in their professional societies, channels through which to make known their individual aims and to cooperate with public and private groups.

It is to such social organizations as the American Medical Association that the nation looks for first line defense of democratic principles. In behalf, then, of the American people and for myself personally, I salute your organization and through it the men and women to whom we owe so much of personal solace in distress, to whom we entrust ourselves and those dearest to us in mankind's every vital crisis.

Very sincerely yours,

HARRY S. TRUMAN.

DR. HARRISON H. SHOULDERS, President, American Medical Association, Atlantic City, N. J.

(By WILLIAM D. HASSETT, Secretary to the President.)

On motion of Dr. William Weston, Section on Pediatrics, seconded by several and carried after discussion, the House recessed at 6 o'clock to meet at 9 o'clock Thursday morning, June 12, 1947.

(To be continued)

Washington Letter

(From a Special Correspondent)

June 26, 1947.

Medical Board to Advise Atomic Energy Commission

Seven scientists in medicine and biology have been appointed to a special medical board of review to advise the U. S. Atomic Energy Commission on atomic research in the medical and biologic fields. The group met in Washington to start work on nonmilitary phases of atomic development. Board members are Dr. Robert P. Loeb, chief, division of medicine, Presbyterian Hospital, New York, chairman; Dr. Detlev W. Bronk, chief radiologist, University Hospital, Philadelphia; Dr. Wallace O. Fenn, professor of biology, University of Rochester Medical School, Rochester, N. Y.; Dr. Herbert S. Gasser, physiologist, Rockefeller Institute for Medical Research, New York; Dr. Ernest W. Goodpasture of Vanderbilt University School of Medicine, Nashville, Tenn.; Dr. Alan Gregg, director for medical sciences, Rockefeller Foundation, New York, and Dr. A. Baird Hastings, Harvard Medical School, Cambridge, Mass.

Criticism of Health Standards in Mining Communities

Health and sanitation conditions in mining communities are criticized in a report of a four month survey of conditions in and about 260 mines in twenty-two major soft coal producing states, issued by the Coal Mines Administration of the Department of Interior and condensed in the Labor Information Bulletin for June. The article states that public health and sanitation are below standard in more than half of the mining communities, and some areas are "a disgrace to the nation." The 340 page report contains forty-seven recommendations, including establishment of a broad system of prepaid medical care for miners and their families, and improvement in the quality of medical services, public sanitation, industrial medicine, recreational activities and housing. The report says that 72 per cent of mines surveyed were inadequately prepared to provide emergency medical care to seriously injured persons. The report adds that there are occasional "tendencies to give less consideration to the quality of medical care than to profits. . . . Both management and labor appear in a few instances to have abused their responsibilities and privileges. . . . Physicians were not selected primarily on the basis of professional qualities but on the basis of personal friendships, financial tie-ups, social viewpoint or other nonmedical consideration." Conditions were reported to be generally worst in company-owned coal camps, comprising 45 per cent of surveyed mines.

House Committee Votes Funds to Start Mental Institute

The House Appropriations Committee has approved an initial appropriation of $850,000 to buy land and prepare plans for the proposed $7,500,000 Institute of Mental Health, to be built near Bethesda, Md. This was the amount asked in the President's budget. The sum covers $450,000 for land and $400,000 for plans. The institute is projected as a national mental health research center, with 200 beds for patients selected for research. It will be erected on land adjacent to the National Institute of Cancer Research on Rockville Pike.

Warm Springs "White House" Presented to Public

Basil O'Connor, president of the Georgia Warm Springs Foundation, has announced that the Little White House at Georgia Warm Springs, where President Franklin D. Roosevelt died on April 12, 1945, was to be presented on June 25 to the people of America. Governor Melvin Thompson of Georgia was to accept the deed to the property for the Franklin D. Roosevelt Warm Springs Memorial Commission created by the state of Georgia. The six room dwelling will subsequently be opened to the public.

Announcement of Allocations of Streptomycin

The Office of Materials Distribution, Department of Commerce, has announced initial streptomycin allocations for June, which total 636,800 Gm. as compared with 553,900 Gm. in May. The allocations for the armed services are 30,000 Gm.; for other government agencies, 42,000; for research, 8,450; for civilian domestic use, 456,350; for civilian export use, 100,000.

Medical Legislation

STATE LEGISLATION

Alabama

Bills Introduced.—H. 241 proposes to authorize every person of sound mind of the age of 21 years or older to designate by an instrument in writing filed in the office of the judge of probate court the disposition to be made of his body or parts thereof after his death. H. 236 proposes an appropriation to the state board of health to provide streptomycin treatment of tuberculosis patients confined in public institutions. S. 112 proposes the enactment of a law to regulate the handling, sale and distribution of barbiturates. The proposal would require prescriptions for barbiturates to be made only by a pharmacist on the original prescription of a person licensed to prescribe and administer barbiturates.

California

Bills Introduced.—A. 717, relating to the practice of naturopathy, was amended in the assembly so as to refer to naturopaths as doctors rather than naturopathic physicians. A. 1808, relating to the regulation of hospitals, was amended in the assembly by adding the proviso that no rule or regulation should be made which would prevent the free choice by any person who is a patient in the hospital of any physician or surgeon licensed and practicing under the Business and Professions Code. A. 2005, proposing the creation of a state board of chiropractic examiners, was amended in the assembly by defining an adjustment as "the act of removing an impingement by hands only." A. 2078, amending the business and professions code relating to the prescribing and use of medicinal preparations, was amended in the assembly by proposing that it be unlawful for any person not licensed under the provisions of division 2 of the business and professions code to use physical medicine on the body of any person, for compensation, provided that such action should not apply to the performance of physical therapy under the direction and supervision of a person licensed under the provisions of the business and professions code. S. 1278, relating to the practice of physical therapy, was amended in the senate so as to propose the creation of a board of physical therapy examiners and so as to define physical therapy as "the performing for compensation, received or expected, of any professional service requiring special education, knowledge or skill, by persons who undertake or represent themselves as able to treat or to alleviate ailment, deformity, fatigue, disease, injury, pain or any other physical or mental condition by physical means, including the various modalities electricity (except x-ray, radium and electrosurgery), light, heat, water, exercise and therapeutic massage." S. 1534, relating to solicitation for group hospitalization, surgical and medical care programs, was amended in the assembly by proposing that no license should be required in connection with the solicitation of individual or group hospitalization, surgical and medical care benefits for members or potential members of any nonprofit agricultural or horticultural organization.

Connecticut

Bill Passed.—S. 826, which passed the house June 3, proposes to repeal the naturopathic practice act but would provide that any person who has received a certificate of registration from the department of health entitling him to practice naturopathy in Connecticut prior to the repeal of the act would not be affected.

Florida

Bills Passed.—H. C. R. 11, which passed the house June 3, proposes the establishment of a committee to make a survey and investigation with reference to the establishment of a medical and dental college in the state of Florida. S. 911, which passed the house June 2, proposes to authorize the city of Jacksonville to cooperate with the state of Florida in providing a suitable site for the establishment of a State College of Medicine and Dentistry in the city.

Illinois

Bills Introduced.—H. 734 proposes that any person who habitually uses narcotic drugs or is found to be addicted thereto shall be guilty of a misdemeanor and shall be sentenced to imprisonment for a term not less than that required to effect a medical cure of the addiction and not more than one year. H. 783 proposes to authorize the department of registration and education to issue certificates of registration to naturopaths and defines naturopathy as "the art and science of naturopathic medicine, which includes the diagnosis, prevention and treatment of human injuries, ailments and diseases by means of any one or more of the psychological, physical or mechanical, chemical or material forces, or agencies of nature as taught by the accredited schools or colleges teaching the art and science of naturopathy." H. 791 proposes, among other things, to authorize corporations organized under the act relating to nonprofit hospital service corporation to act as agents for a medical service plan corporation in the solicitation of subscribers, etc. H. 792 proposes to authorize a medical service plan corporation to appoint a corporation existing under the nonprofit hospital service plan act to act as its agent in the solicitation of subscribers, etc. H. 872 and S. 626 propose to require the annual registration of osteopaths and to further require that osteopaths, at the time of their annual registration, should submit evidence that they have attended a course of refresher study of at least two days during the course of the prior year. S. 551, which passed the senate June 11, proposes to authorize the creation and establishment of a medical center district in the city of Chicago and to set forth the powers of the medical center commission administering such district. S. 575 proposes the establishment and operation of the Illinois Research Institute for the Study and Treatment of Chronic Illness and Geriatrics and makes an appropriation therefor.

New Hampshire

Bill Introduced.—S. 86 proposes to limit the sale of barbituric acids to the sale of prescriptions signed by a practitioner licensed by law to prescribe and administer barbiturates.

New Jersey

Bill Introduced.—A. 314 proposes an act requiring the licensing, inspecting and regulating of private nursing homes and private hospitals and the creation of a hospital licensing board.

Pennsylvania

Bill Introduced.—S. 846 proposes to authorize any person over the age of 16 who has been convicted of a crime to be sent to the Pennsylvania Correctional Diagnostic and Classification Center for diagnosis if the court is of the opinion that such person may be a defective delinquent.

Woman's Auxiliary

West Virginia

Mrs. F. Carl Chandler of Bridgeport assumed the presidency of the Woman's Auxiliary of the West Virginia State Medical Association at the twenty-third annual meeting in Charleston, May 12-14. Mrs. W. E. Hoffman of Charleston was installed as president-elect; other elective officers installed were vice presidents Mrs. John F. McCuskey, Clarksburg; Mrs. L. D. Norris, Fairmont; Mrs. T. U. Vermillion, Beckley; Mrs. Dana T. Moore, Parkersburg; recording secretary Mrs. C. J. Holley, Wheeling, and treasurer Mrs. Ross P. Daniel, Beckley. Capt. George M. Lyon (MC), U.S.N.R., of Huntington, guest speaker at the luncheon May 14, discussed the application of atomic energy in medical research. More than 225 guests attended the tea at the executive mansion Wednesday afternoon.

Illinois

The Women's Auxiliary of the Loyola School of Medicine, Chicago, held its first annual luncheon May 31. The membership numbers about 350.

Coming Medical Meetings

Alaska Territorial Medical Association, Fairbanks, July 28-30. Dr. William J. Blanton, Juneau, Secretary.

American Orthopedic Association, Hot Springs, Va., The Homestead, June 27-30. Dr. C. Leslie Mitchell, Henry Ford Hospital, Detroit 2, Secretary.

American Physiotherapy Association, Pacific Grove, Calif., July 6-12. Miss Mildred Elson, 1790 Broadway, New York 19, Secretary.

American Urological Association, Buffalo, N. Y., Hotel Statler, June 30-July 3. Dr. Thomas D. Moore, 899 Madison Ave., Memphis 3, Tenn., Secretary.

Minnesota State Medical Association, Duluth, June 30-July 2. Dr. B. R. Souster, Lowry Medical Arts Bldg., St. Paul 2, Secretary.

GOVERNMENT SERVICES

ARMY

PROPOSED LEGISLATION TO IMPROVE THE STATUS OF MEDICAL OFFICERS

Hon. Robert P. Patterson, Secretary of War, noted in an address before a luncheon of the House of Delegates of the American Medical Association in Atlantic City, June 10, that it has been evident that something was irritating the medical officer of the Army ever since doctors became associated with the Army a hundred and seventy years ago. The irritation, Mr. Patterson said, did not seem to impair seriously the medical officer's work, for in war and peace he gave his services willingly and well. "It was not until the last war, when 47,000 doctors came into the Army, that we finally put our finger on the true cause of the medical officer's complaint. It was a sense of uncertainty and dissatisfaction about being able to practice his profession in a manner which would be professionally satisfying to him." The War Department is determined, Mr. Patterson continued, that the professional status of its medical officers in the future be removed from any doubt. The caliber of medical care during World War II made the army resolve to maintain the best features of that service in the years ahead.

As a step toward making army medicine a satisfying career for qualified doctors, a bill has been introduced in Congress which, in summary, provides: 1. Payment of $100 a month extra to all medical officers with less than thirty years' service. 2. Payment of an increase of 25 per cent of base and longevity pay to medical officers designated as specialists. 3. Establishment of positions for four chief consultants who would also be professors at the Army Medical Center in Medicine, surgery, neuropsychiatry and preventive medicine. These consultants would be similar in military status to professors at the U. S. Military Academy at West Point and would have an assimilated rank of brigadier or major general. They would also have authority to establish professional leadership in planning the education and careers of junior officers and in determining the professional policies that govern the care of the soldier patient. 4. Original appointments in the medical corps of outstanding specialists from civilian life, in higher grades and at later ages than are authorized at present. 5. Employment, without regard to civil service requirements, of civilian physicians in six grades at a salary of from $3,640 to $9,800. In addition, specialists would receive 25 per cent extra up to $11,000 a year. Mr. Patterson told his audience, which was composed of doctors, that "the War Department needs your support not only for this bill but for the entire program, giving the Army a medical service in peacetime equal to that of the war years."

ARMY ASSISTS IN FLOODED AREAS

The War Department announces that the Fifth Army has furnished the Red Cross, for use in the Ottumwa, Iowa, flooded area, with 54 Lister bags, a supply of calcium hypochlorite, 30,000 halazone tablets for sterilizing drinking water and many bottles of antitetanus serum. Thirty trucks with drivers were also furnished to army engineers in that area for use in hauling sand bags to strengthen the levees. In the Rutland, Vt., flood, army water supply equipment was provided to meet civilian water requirements until the city water system was again in operation. The First Army commander took steps to furnish assistance to care for thousands of displaced persons in case the Crittenden Dam, north of Rutland, failed.

At Camp Edwards, Massachusetts, and at Fort Dix, New Jersey, one company of First Army troops at each post was alerted for possible use at Rutland for flood relief duty and various detachments were sent to Vermont. Trucks were moved from Camp Kilmer, New Jersey, to Schenectady, N. Y., and made ready to move to Rutland on short notice. Medical units also were alerted.

AVIATION MEDICAL EXAMINERS

The School of Aviation Medicine, Randolph Field, Texas, graduated thirty-two officers of the Medical Corps on May 29 from the course for aviation medical examiners. The course, which covers a period of nine weeks, is designed to make medical officers proficient in the special duties required of aviation medical examiners, to familiarize them in coordinating such duties with other activities, and to indoctrinate them in flying training. Diplomas were granted at this time to the following officers:

Brig. Gen. Wallace H. Graham
Major Richard J. Brightwell.
Major Julius A. Goldbarg.
Major Philip B Watkins, M. C.
Capt. Arthur H. Coleman.
Capt. William F. Hamilton.
Capt. David H. Stoddard.
1st Lieut. Robert S. Boyd.
1st Lieut. John H. Burkhart.
1st Lieut. Earl K. Cantwell.
1st Lieut. Erin M. Dillard.
1st Lieut. Paul G. Donner.
1st Lieut. William C. Doust.
1st Lieut. James O. Fergeson.
1st Lieut. Leewan R. Kellam.
1st Lieut. Clayton H. Klaseg.
1st Lieut. Gerald J. Kochovar.
1st Lieut. Hugh B. McManus.
1st Lieut. Eustace P. Miller Jr.
1st Lieut. William E. Murphy.
1st Lieut. Niels Neustrup.
1st Lieut. George B. Nicholson.
1st Lieut. Robert M. Russell.
1st Lieut. William L. Sager.
1st Lieut. E. W. Schmidt.
1st Lieut. Carrol C. Shinn.
1st Lieut. Jesse E. Waller.
1st Lieut. George E. Wilson Jr., M. C.
Lieut. Ricardo A. Gonella, Argentine navy.
Capt. German Aguilar, Argentine army.
Major Humberto Rossetti, Argentine army.
Capt. Eduardo Subieta, Argentine army.

NEW SURGEON GENERAL TAKES OFFICE

In ceremonies at the War Department attended by officers of the General Staff and Administrative and Technical Services and members of the Surgeon General's Office, Major Gen. Raymond W. Bliss was sworn in on June 2 as the new surgeon General of the U. S. Army. Major Gen. Norman T. Kirk, whose four year term as Surgeon General had expired, in wishing General Bliss success, stated that "he will be the captain of a splendid team which has carried on in this office with an outstanding record and which has planned during the difficult interim period for the future of the department. Through the leadership of the new Surgeon General and his deputy (Brig. Gen. George E. Armstrong, who also took the oath of office at this time) and with the support of the able remaining officers of the Medical Department, I know that the future of the Medical Department is assured." General Kirk plans to retire to his new home at Montauk, Long Island.

PERSONAL

Lieut. Col. Stephen C. Sitter, M. C., has been appointed assistant chief of the neuropsychiatry consultant division in the Surgeon General's Office. He was chief of the neuropsychiatry section at Sternberg General Hospital, Manila, P. I., in 1941. Captured by the Japs at Bataan, he spent almost three years in Cabanatuan prison camp.

Capt. Peter L. Beaconsfield, M. C., was recently awarded the Croix de Chevalier de l'ordre de la Santé Publique by the French Ministry of Public Health "for outstanding contribution and devotion to the cooperative French-American medical service for all Orly Field personnel." He served with the army air transport command in the Azores, London and Paris. Captain Beaconsfield studied medicine at Oxford University in England and Georgetown University in Washington, D. C., and interned at the French Hospital in San Francisco before entering the service.

President Truman sent to the Senate in May for confirmation the names of seventeen wartime general officers for appointment to the officer reserve corps and in this list was the name of Brig. Gen. William C. Menninger of Topeka, Kan., formerly director of the neuropsychiatry division in the Surgeon General's Office.

ARMY AWARDS AND COMMENDATIONS

Brigadier General Frederick A. Blesse

The Distinguished Service Medal has been awarded to Brig. Gen. Frederick A. Blesse, M. C., U. S. Army. The citation read as follows: He performed exceptionally meritorious and distinguished service from March 1943 to April 1944. As surgeon, North African Theater of Operations, and deputy chief surgeon and chief medical inspector of Allied Forces Headquarters, General Blesse contributed notably to the high medical standards which had thus far been attained. A great improvement of the overall efficiency of the entire medical service of the Army resulted from the many new procedures, innovations and methods which he introduced and developed. The fact that the mortality rate of our forces was much lower than that of any previous campaign of any army was due, in a high degree, to his ability, judgment and leadership. General Blesse, who has also received the Oak Leaf Cluster to the Legion of Merit, graduated from Hahnemann Medical College in 1913 and entered the military service in July 1917.

Brigadier General Thomas R. Glenn

The Legion of Merit has been awarded to Brig. Gen. Thomas R. Glenn, M. C., U. S. Army. The citation read in part as follows: For exceptionally meritorious conduct in the performance of outstanding service from Oct. 1, 1940 to Feb. 20, 1942 as surgeon, West Coast Air Corps Training, Moffett Field, California, as surgeon, Air Corps Flying Training Command, subsequently Army Air Forces Training Command, Fort Worth, Texas, from Feb. 21, 1942 to Aug. 15, 1944. General Glenn through his initiative and administrative ability planned and supervised the accomplishment of an adequate medical service in pace with the accelerated expansion of the Army Air Forces. He was prominently identified with the institution and standardization of classification tests for selecting future air crew and officers. His outstanding performance of duty and distinguished service contributed to the success of the Army Air Forces Training Command and the global mission of the Army Air Forces. Dr. Glenn graduated from Jefferson Medical College, Philadelphia, in 1914 and entered the military service May 3, 1947.

Colonel John B. Flick

The Bronze Star Medal was recently awarded to Col. John B. Flick, M. C., A. U. S., of Philadelphia, for meritorious service in connection with military operations against the enemy from April 15 to Sept. 2, 1945. As surgical consultant, Office of the Surgeon, Headquarters, U. S. Army Forces, Pacific Ocean Areas, later Middle Pacific, Colonel Flick was instrumental in achieving and maintaining high standards of surgical service in hospitals throughout the command during a period of vital combat operations which culminated in the Japanese surrender. His evaluations of medical and military abilities and skills resulted in the assignment of medical officers to duties most appropriate to their training and backgrounds. The fine professional and military attainments, tact and devotion to duty of Colonel Flick were of major importance in the success of the mission of the Medical Department in the Pacific Ocean Areas.

Colonel Flick was also awarded the Legion of Merit for outstanding service as surgical consultant, Ninth Service Command, from Nov. 1, 1943 to March 30, 1945. Dr. Flick graduated from Jefferson Medical College in 1913 and entered military service Aug. 11, 1942.

Colonel Norman W. Anderson

The Legion of Merit and the Bronze Star Medal have been awarded to Col. Norman W. Anderson, M. C., U. S. Army. In the citations exceptional medical services from December 1941 to September 1944 while in the United States are mentioned. He served in turn at the Station Hospital, Camp J. T. Robinson; with the 341st Medical Regiment; as division surgeon, 30th Infantry Division, and on the staffs of the Fourth, Eighth and Ninth armies. His accomplishments in training troops, preventive medicine and operations were outstanding.

While serving with the Army of the United States he distinguished himself by meritorious service in connection with military operations on the continent from Sept. 5, 1944 to March 30, 1945. Colonel Anderson, as executive officer, Medical Section, Headquarters Ninth United States Army, was instrumental in protecting the health of the troops of the Ninth United States Army. The meritorious service of Colonel Anderson is in keeping with the high traditions of the military service. Colonel Anderson was also awarded the Purple Heart for wounds received in action in Mastricht, Holland, Dec. 31, 1944. Dr. Anderson graduated from the University of Minnesota in 1930 and was commissioned in the regular Army in July 1931.

Colonel James Barrett Brown

The Legion of Merit has been awarded to Col. James Barrett Brown, M. C., A. U. S., of St. Louis. As chief of plastic and maxillofacial surgery at Valley Forge General Hospital from June 1943 to August 1945 he performed or personally supervised the performance of 7,822 plastic surgical operations on 4,705 patients without a single death. The citation states that through consummate skill, experience and native ability he restored thousands of young men to useful lives who were otherwise faced with hopeless invalidism. By tireless energy and devotion to duty he performed a service highly distinguished in character and of lasting benefit and enduring value to society. Dr. Brown graduated from Washington University School of Medicine, St. Louis, and entered the military service June 8, 1942.

Colonel Harold W. Jones

The Legion of Merit has been awarded to Col. Harold W. Jones, M. C., U. S. Army, retired, of Washington, D. C. The citation states that under his able guidance and leadership the Army Medical Library was developed into a source of information for the entire medical profession and was raised to the high place it now occupies among the medical libraries of the world. His outstanding contributions in making the Army Medical Library one of the foremost collections of medical literature in the world will be of continuing and lasting benefit. Dr. Jones graduated from Harvard Medical School in 1901 and entered the military service in 1906.

Colonel John D. Yeagley

The Legion of Merit has been awarded to Col. John D. Yeagley, M. C., A. U. S., of Winston-Salem, N. C., who served as assistant director and later as director, Health and Sanitation Division, Institute of Inter-American Affairs, from February 1943 to November 1945. Attention is called in the citation to the fact that he demonstrated great ability in his tactful administration of an international preventive medicine program and was instrumental in improving health conditions throughout Central and South America during the war years. Dr. Yeagley graduated from the University of Pennsylvania School of Medicine in 1930 and entered the military service in June 1946.

Lieutenant Colonel Webb Haymaker

The Army Commendation Ribbon has been awarded to Lieut. Col. Webb Haymaker (then Major), M. C., A. U. S., who is cited as having served with unusual devotion and professional skill from Aug. 24, 1942 to Jan. 23, 1946, contributing materially to the professional success of the Army Institute of Pathology, especially as it concerned diseases and injuries of the nervous system. His studies and research have resulted in significant contributions to the knowledge of these conditions, and especially the brain tumors, the encephalitides, heat stroke and changes induced by poison war gases, all conditions of great importance to the military service. Dr. Haymaker graduated from the Medical College of the State of South Carolina in 1928 and entered the military service in August 1942.

Lieutenant Colonel Bradford Cannon

The Legion of Merit has been awarded to Lieut. Col. Bradford Cannon (then Major), M. C., A. U. S., of Boston. The citation states that, as assistant chief and later as chief of the maxillofacial plastic section, Valley Forge General Hospital,

from March 1945 to December 1945, he performed or personally supervised thousands of plastic surgical operations. By his professional skill, sound judgment and conscientious devotion to duty he was instrumental in making it possible for young men who might otherwise have been maimed for life to return to useful and normal careers. Dr. Cannon graduated from Harvard Medical School in 1933 and entered military service April 26, 1943.

Lieutenant Colonel Thomas H. Sternberg

The Legion of Merit has been awarded to Lieut. Col. Thomas H. Sternberg, M. C., A. U. S., of Los Angeles. The citation read in part as follows: As director of the venereal disease control division, Office of the Surgeon General, he rendered exceptional services in the medical program of the Army. He directed the venereal disease treatment program at a most critical period when the schedule of treatment was being changed from the older extended treatment to the newer penicillin methods. He played an active and important role in the research on penicillin methods of treatment. Largely through his efforts the results of this research were quickly applied to the venereal disease problem in the Army, revolutionizing within an amazingly short period the entire approach to treatment of these diseases. Lieutenant Colonel Sternberg's signal achievements were a prime factor in the establishment of a record in the control of venereal diseases that reflects great credit on himself and on the Medical Corps of the Army. Dr. Sternberg graduated from Northwestern University Medical School in 1934 and entered the military service in April 1942.

Lieutenant Colonel Wayne G. Brandstadt

The Bronze Star Medal has been awarded to Lieut. Col. Wayne G. Brandstadt, M. C., U. S. Army. The citation read as follows: For meritorious service in connection with military operations, as commanding officer, 53d General Hospital (in England) from Aug. 1, 1944 to May 8, 1945. Lieutenant Colonel Brandstadt displayed superior administrative and professional ability in the treatment, care and evacuation of battle casualties. His marked leadership and exemplary devotion to duty were a constant source of inspiration to his patients and associates and contributed to the morale, efficiency and high standards attained by the Medical Department in support of operations against the enemy, thereby reflecting great credit on himself and on the armed forces of the United States. Dr. Brandstadt graduated from Rush Medical College, Chicago, in 1924 and entered the military service in 1930. He is now editor of the *Bulletin of the U. S. Army Medical Department* and secretary of the Army Medical School, Washington, D. C.

Lieutenant Colonel Malcolm J. Farrell

The Legion of Merit has been awarded to Lieut. Col. Malcolm J. Farrell, M. C., A. U. S., of Waverly, Mass., who was deputy director, neuropsychiatry consultants division, Office of the Surgeon General, from April 1942 to June 1945. The citation states that he displayed exceptional ingenuity and foresight. As a result of his initiative and resourcefulness, division psychiatrists were appointed, mental hygiene consultation services were established throughout the country and a critical backlog of psychiatric patients in the Pacific Theater was eliminated. Dr. Farrell graduated from Tufts College Medical School in 1931 and entered the military service in July 1941.

Major David H. Clement

The United States of America Typhus Commission Medal has been awarded to Major David H. Clement, M. C., A. U. S., of New Haven, Conn. The citation read as follows: He rendered meritorious service as surgeon in charge of the United States of America Typhus Commission ward in the 116th Evacuation Hospital at Dachau, Germany, from May 10 to June 10, 1945. Major Clement's devoted supervision of the care of patients suffering from endemic typhus and his scrupulous attention to the management of therapy with immune serum and with para-aminobenzoic acid contributed directly to humanitarian service and to the improvement in methods of treatment of typhus fever. Dr. Clement graduated from Harvard Medical School in 1935 and entered the military service in 1941.

Major John J. Flanagan

The Legion of Merit has been awarded to Major John J. Flanagan, M. C., A. U. S., of Newark, N. J. The citation read as follows: As chief, orthopedic section, surgical service, Kennedy General Hospital, Memphis, Tenn., from January 1943 to December 1945, he devised an original operative procedure for overcoming extensive defects in the long bones by a massive sliding stepped graft. His expert professional knowledge and loyal devotion to duty insured limbs to patients threatened with permanent and total disability. Dr. Flanagan graduated from Georgetown University School of Medicine, Washington, D. C., in 1930 and entered the military service in October 1942.

Captain Henry S. Fuller

The United States of America Typhus Commission Medal has been awarded to Capt. Henry S. Fuller, M. C., A. U. S., now of London, England. The citation read in part as follows: He rendered exceptionally meritorious service in connection with the work of the United States of America Typhus Commission in the investigation of the epidemiology of scrub typhus in Assam and Burma from November 1944 to November 1945. First as member and later as director of the mite laboratory Captain Fuller reorganized and coordinated its activities in such a manner as to lead directly to the demonstration of the important mite vector of the disease and the development of a rapid survey technic for the estimation of the hazard from disease of particular areas of terrain. Dr. Fuller graduated from Harvard Medical School in 1941 and entered the military service in April 1943.

Captain Edmund A. Flexman

The Bronze Star Medal has been awarded to Capt. Edmund A. Flexman, M. C., A. U. S., of Milledgeville, Ill. The citation read as follows: He performed meritorious service from March 13 to March 22, 1944 while engaged in an extensive typhus control program in areas infested by a particularly virulent strain of scrub typhus mite on Goodenough Island in the Southwest Pacific. Realizing the risk he ran in fighting this little understood disease of high mortality rate, he nevertheless vigorously completed the epidemiologic work entailed in controlling an epidemic on the island. He made valuable recommendations to the Surgeon General for use in combating typhus fever. Captain Flexman's work is a distinct credit to himself and to the Army Medical Corps. Dr. Flexman graduated from the University of Illinois College of Medicine in 1938 and entered the military service in October 1942.

Captain Maurice C. Gephardt

Capt. Maurice C. Gephardt, now in Tokyo, has been awarded the United States of America Typhus Commission Medal for outstanding work during the typhus epidemic in Japan during the early part of 1946. The citation read in part as follows: With unfailing energy and high intelligence, Captain Gephardt dealt successfully with many novel and difficult situations. He contributed directly to the differential diagnosis of typhus fever in Japan. He assisted in training personnel and in supervising programs in typhus control in Tokyo, Osaka and Kobe as well as other locations in Japan. Captain Gephardt, acquitting himself with distinction, contributed to the advance of military and civilian preventive medicine. Dr. Gephardt graduated from the University of Oklahoma School of Medicine, Oklahoma City, in 1943 and entered the military service in September 1945.

Captain Thomas L. De Lorme Jr.

The Legion of Merit has been awarded to Capt. Thomas L. De Lorme Jr., M. C., A. U. S., now of Boston. The citation read as follows: For exceptionally meritorious service at Gardiner General Hospital, Chicago, in the development of new methods and procedures and equipment in physical therapy during the period of Feb. 26, 1944 to Aug. 1, 1945. During this period he devised apparatus and set up the program of heavy resistance exercises in the physical therapy department of this hospital, inaugurating and improving the efficiency of a new method of treatment of orthopedic cases. Dr. De Lorme graduated from New York University in 1943 and entered the military service in January 1944.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Bray, Charles B. Jr.....Birmingham
Chapman, Jesse P. Jr.....Selma
Dibble, Eugene H. Jr.....Tuskegee
Harris, Elmer J.....Scottsboro
Hightower, Russell G.....Birmingham
Macruder, Thomas V. Jr....Birmingham
Podoll, Elliott.....North Birmingham
Whorton, Carl M.....Gadsden

Arizona

Farness, Orin J.....Tucson

Arkansas

Binns, Van C.....Monticello
Crow, Edward W.....Little Rock
Goldberg, Harold B.....Little Rock
Rodgers, Clyde D.....Little Rock
Rhyne, James T.....Little Rock
Smith, Norman K.....Reyno

California

Barnet, Garfield S.....Santa Rosa
Bischoff, Arthur J.....Los Angeles
Blanchard, Leland B.....San Jose
Blinn, John F. Jr.....Stockton
Bloomer, William E.....Palo Alto
Brenner, William R.....San Anselmo
Browning, Ellis V.....Arlington
Bucchianeri, Gino J.....San Francisco
Cherry, Ian S.....Huntington Park
Clark, Edward C.....Fresno
Cragin, Robert B.....San Jose
Cronemiller, Ray E.....Exeter
Dalton, Kenneth R.....Oakland
Daly, Joseph A.....Ventura
Darling, Herbert H.....San Francisco
Digal, Leonilo T.....Los Angeles
Donahue, Daniel W.....Los Angeles
Eisele, Gregory J. Jr.....Westwood
Fields, Irving A.....Los Angeles
Garol, Hugh W.....Berkeley
Gartshore, Hendrie L.....Berkeley
Gibson, Thomas A.....Los Angeles
Goble, Garvin G.....Mount Shasta
Godett, Michael R.....Pasadena
Goodwin, Marvin H.....Los Angeles
Haynes, Harry J.....Palo Alto
Jacobson, Hjalmer A.....Fresno
Jumblatt, Albert.....San Diego
Kahn, Bernard.....San Francisco
Lee, Richard S.....Stanford University
McMullen, Raymon W.....Los Angeles
Metz, Ralph E.....San Francisco
Morse, David L.....Gilroy
O'Hare, James O.....San Francisco
Phillips, Samuel.....Duarte
Rhoden, Jackson A.....Sacramento
Rohde, Robert B.....North Hollywood
Scarborough, Dorothy L...San Fernando
Semenov, Herman.....Beverly Hills
Stryble, Francis J.....Oakland
Taylor, David R.....Reedley
Thuesen, Andrew E.....Piedmont

Colorado

Bramley, Howard F.....Denver
Chat, Emanuel.....Fort Lyon
McDonald, John G.....Denver
Maul, Kester, V.....Denver
Roper, William H.....Denver
Vest, Walter E.....Denver

Connecticut

Bugel, Harry J.....Ansonia
Carangelo, Edward V.....New Haven
Huddleson, James H. Jr.....New Canaan
Iger, Mortimer.....Manchester
Michael, Lawrence I.....New Haven
Michalowski, Valerian S.....Kensington
Mozzer, Alexander J.....Manchester
Pulman, Peter B.....West Hartford
Ryan, Francis J.....Hartford
Tombari, Seraphino P.....West Haven

Delaware

Charamella, Italo.....Wilmington
Mark, Morton F.....Wilmington

District of Columbia

Agee, Fred B.....Washington
Albright, Charles J.....Washington
Coleman, Allan B.....Washington
Crofton, George H.....Washington
Farrell, John C. Jr.....Washington
Glezer, Benjamin.....Washington
Hantman, Irvin.....Washington
Lambert, John M.....Washington
Mella, Hugo.....Washington
Pinderhughes, Charles A.....Washington
Sugar, Samuel J.....Washington
Traub, Leo M.....Washington

Florida

Anderson, Hiram M.....Sydney
Kendall, William E....N. St. Petersburg
Lang, Andrew M.....Lakeland
Lubrano, Daniel F.....Tampa
Patton, Bernard W.....St. Petersburg
Robbins, Alexander.....Miami Beach
San, James M.....St. Petersburg
Sieger, Simon.....Bay Pines
Stillman, Sidney.....Jacksonville

Georgia

Baggs, Wade H. Jr.....Camilla
Cole, Thomas M.....Newman
Conger, Abraham B. Jr.....Bainbridge
Conger, Preston D.....Tifton
Cooper, Frederick W. Jr....College Park
Morse, Dan G.....Columbus
Ridley, Charles L. Jr.....Macon
Salter, William L.....Savannah

Idaho

Battles, Newell H.....Idaho Falls
Carssow, John E.....Lewiston
Corbett, Glenn W.....Grace
Cromwell, James O.....Blackfoot

Illinois

Banen, David M.....Chicago
Bartling, Carl H.....Rockford
Best, George J.....Peoria
Black, Arnold.....Chicago
Blough, George J.....Chicago
Brown, Amos J.....Chicago
Bush, Mitchell W.....Maywood
Butler, Robert E.....Oak Park
Carofiglio, Louis E.....Chicago
Carter, Kenneth L.....Mattoon
Cerny, Frank J.....Berwyn
Cockrell, Benjamin A.....Chicago
Corren, Herman.....Chicago
Dorne, Ralph M.....Chicago
Dworin, Jack W.....Chicago
Eisenman, Leon S.....Forest Park
Farney, William E.....Chicago
Forman, Jerome.....Chicago
Freeman, Leslie W.....Moline
Gelfano, Leo.....Chicago
Giannini, Michael W.....Chicago
Golob, Meyer E.....Downey
Heiskell, Edgar F. Jr.....Chicago
Hobson, Lawrence B.....Chicago
Kauder, Otto G.....Shelbyville
Klocker, Karl J.....Chicago
Landgraf, Robert L.....Seneca
McCullough, Norman B.....Chicago
McNamara, William L.....Hines
Marshall, Charles E.....Chicago
Mason, Aaron S.....Downey
Merrell, Hosmer T.....Chicago
Minner, Morris G.....Chicago
Monroe, Stanley E.....Evanston
Moore, James A.....Urbana
Otis, William H.....Moline
Parker, Thomas W.....Alton

Illinois—Continued

Purves, Robert K.....Des Plaines
Rafool, Francis.....Peoria
Rodewald, Herbert.....Murphysboro
Rosenfeld, Robert T.....Highland Park
Schrek, Robert.....Hines
Simonson, Melvin.....Chicago
Sirca, Dionisie M.....Springfield
Slobodin, Harry.....Chicago
Stephenson, Hack U. Jr.....Hines
Stevens, Ernest J.....Hines
Stuppy, George W.....Chicago
Sumner, Albert.....Chicago
Trapnell, John M. Jr.....Kenilworth
Turner, George C.....Chicago
Wilson, Nilas M.....Oak Park

Indiana

Choate, Alton J.....Indianapolis
Cox, Wayne T.....West Lafayette
Dodd, Robert D.....South Bend
Duffy, Joseph P.....Rockport
Dulin, Basil B.....Bedford
Flaherty, Bernard E.....Indianapolis
Kendrick, William M. Jr....Indianapolis
Kopcha, Joseph E.....Whiting
Manalan, Maurice M.....Indianapolis
Marsh, John P.....Blountsville
Melloh, Ardie F.....Indianapolis
Mendenhall, Clarence D.....Indianapolis
Moore, Kirk.....Terre Haute
Ripley, John W. Jr.....Seymour
Schuster, Dwight W.....Indianapolis
Taylor, Clifford C.....Indianapolis
Tucker, Robert L.....Fountaintown
Welsh, John B.....Anderson

Kansas

Glaser, Leland F.....North Topeka
Heasty, Robert G.....Manhattan
Hoge, Solomon F.....Leavenworth
Knauff, Harry A.....Mahaska
Mayer, Ben H.....Ellsworth
Revell, Arthur J.....Pittsburg
Robertson, Howard T.....Concordia
Rohr, Joseph H.....Burlington
Sitterley, Jay L.....Great Bend
Terry, Charles D.....Hardtner

Kentucky

Biltz, Stuart G.....Fort Thomas
Covington, Aubrey Y.....Georgetown
Fink, Ira S.....Lexington
Mayer, Frederick.....Lexington
Neill, James M.....Valley Station
Ogden, Owen S.....Louisville
Quaife, Clarence E. Jr.....Fort Knox
Ross, Leon.....Outwood
Russell, Blanton E.....Clinton
Van Arsdall, Thomas C.....Harrodsburg

Maine

Blaisdell, William B. Jr.....N. Sullivan
Butler, Harry.....Bangor
Mazzola, Stephen.....Augusta
Schwartz, David.....Augusta
Trowbridge, Maxon Jr.....Ellsworth
White, Carleton B.....Morrill

Maryland

Anchell, Melvin.....Baltimore
Biehl, Harold P.....Frederick
Book, Donald T.....Bethesda
Brown, Delmer J.....Takoma Park
Conley, Carroll L.....Baltimore
Insley, James K. Jr.....Baltimore
Kohn, Schuyler G.....Baltimore
Lilienfeld, Abraham M.....Baltimore
McGreevy, Joan F.....Perry Point
Mendelis, Christopher J.....Baltimore
Scherlis, Irving.....Baltimore
Steckler, Philip P.....Perry Point
Velkoff, Cyril L.....Bethesda

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts

Blanchard, Herbert N. ..... Hingham
Burwell, Edward L. ..... Wood's Hole
Bush, James F. ..... Springfield
Cannon, Bradford ..... Boston
Capodieci, Florindo H. ..... Dorchester
Chandler, John P. ..... East Bridgewater
Chayet, Jacob ..... Brookline
Conlin, John F. ..... Chelsea
Corwin, William ..... Waltham
Covner, Philip D. ..... Lynn
Croce, Edmund J. ..... Worcester
Cummings, Harwood W. ..... Greenfield
Golden, Samuel C. ..... Fitchburg
Goldthwait, Joel Cabot ..... Medfield
Hawk, Walter D. ..... Watertown
Hickey, William C. ..... Lawrence
King, William J. ..... South Hamilton
Klein, Robert Z. ..... Boston
Lane, Francis R. ..... Somerville
Livingston, Stanton K. ..... Boston
MacDouglass, Allister F. Jr. ..... Westford
Nicholson, Joseph H. ..... Lawrence
Risley, Thomas S. ..... Milton
Stone, Anthony J. ..... Athol
Strong, Richard P. ..... Boston
Sullivan, Francis X. ..... Revere
Thompson, Lewis B. ..... Newton Highlands
Toltz, Julius B. ..... Brookline
Wall, James R. ..... Lynn
Wauters, Clifford W. ..... Somerville
Wharton, Russell S. ..... Northampton

Michigan

Caputo, Joseph M. ..... Dearborn
Cooley, Charles W. ..... Jackson
Culp, Ormond S. ..... Detroit
Freeman, William K. ..... Fort Custer
Gerber, Herbert V. ..... Saginaw
Gladman, Arthur E. ..... Detroit
Hirschy, Ira D. ..... Ann Arbor
Kling, Victor F. ..... Ionia
Koch, Donald A. ..... Brown City
Kowalski, Henry J. ..... Grand Rapids
Kurtz, Joseph L. ..... Ironwood
Matthews, Harry C. ..... Detroit
Meengs, Marvin B. ..... Muskegon
Paye, Philip H. ..... Grosse Pointe
Susskind, Myron V. ..... Jackson
Truszkowski, Edward G. ..... Detroit
Van Eck, James E. ..... Detroit
Walker, Edmund F. ..... Ann Arbor

Minnesota

Anderson, James R. ..... Rochester
Golden, Howard ..... Minneapolis
Hammarsten, James F. ..... Wadena
Hanson, Curtis M. ..... Dawson
Muccilli, Frank A. ..... Duluth
Rockwood, Philo H. ..... Minneapolis

Missouri

Berry, Maxwell G. ..... Kansas City
Brogan, Horace E. ..... St. Louis
Charnas, Raymond M. ..... St. Louis
Epp, George J. ..... St. Louis
Francisco, Clarence L. ..... Kansas City
Goldberg, Isadore E. ..... Polo
Goodman, Lawrence O. ..... St. Louis
Groom, Horace E. ..... Richmond Heights
Klebba, Larry B. ..... Rich Fountain
Knabb, Kenneth E. ..... Springfield
Koerner, Kenneth A. ..... St. Louis
Menefee, Buell F. ..... Montgomery City
Pappenfort, Robert B. Jr. ..... Columbia
Pennington, Francis E. Jr. ..... Clayton
Richtarsic, Stephen R. ..... Clayton
Ritter, Eugene F. ..... Coatesville
Shaw, William J. ..... Fayette
Sterling, Harold W. ..... St. Louis
Tversky, Edgar L. ..... St. Louis

Montana

Casebeer, Robert L. ..... Butte
Goff, John L. Jr. ..... Valier
Rotar, Leo F. ..... Butte

Nebraska

Blair, James B. ..... Broken Bow
Blair, Ralph L. ..... Broken Bow
Campbell, John F. ..... Grand Island
Crellin, Henry G. ..... Lyons
Haworth, John E. ..... Aurora
Liston, Howard E. ..... Elmwood
Mann, Albert W. ..... Omaha
Novak, Joseph J. ..... Howells
Wilson, Nat J. ..... Lincoln

New Hampshire

Biron, Paul E. ..... Manchester
Daly, Kenneth J. ..... Manchester

New Jersey

Bernstein, Bertram M. ..... Trenton
Bruzza, George G. ..... Belmar
Carsley, Sidney H. ..... Crawford
Catanzaro, Vincent J. ..... Garfield
Chalfant, William P. Jr. ..... Ventnor City
Finkelstein, Malvin ..... Jersey City
Forer, Robert ..... Trenton
Giannini, Francis F. ..... Bernardsville
Girardo, Anthony J. ..... Berlin
Goff, Frank J. ..... Red Bank
Gottesman, Abraham H. ..... Farmingdale
Guertin, Diomede ..... Skillman
Korman, Arnold ..... Paterson
McWhorter, John E. ..... Tenafly
Martin, William E. ..... Elizabeth
Massey, Bart P. ..... Grantwood
Nevius, William B. ..... East Orange
Presberg, Mowey ..... Lyons
Shobe, Merritt B. ..... Salem
Smith, Byron J. ..... East Orange
Tuttle, John S. ..... Bayonne
Yaeger, Leslie A. ..... Trenton

New York

Alaimo, Stephen L. ..... Rochester
Altomare, Edward P. ..... Brooklyn
Ambrose, George B. ..... Brooklyn
Ashley, Moe ..... Brooklyn
Ballou, DeForrest Jr. ..... Castle Point
Barnaby, Henry C. ..... Glen Cove
Bashein, Hyman ..... Brooklyn
Bilik, Samuel E. ..... New Rochelle
Birnkrant, Harold ..... Brooklyn
Blanchette, Louis A. ..... Batavia
Bond, Franklyn F. ..... Rochester
Brady, William E. ..... Ossining
Bruns, Hans J. ..... Syracuse
Burger, Mortimer D. ..... New York
Burgess, Harry W. ..... Brooklyn
Cantow, Lawrence A. ..... New York
Casesa, Philip R. ..... Brooklyn
Catinella, Anthony S. ..... New York
Cavanagh, Harold E. A. ..... Buffalo
Chamberlain, William H. ..... Warwick
Conant, Roger ..... Amsterdam
Condello, Anthony V. ..... Brooklyn
Constantine, Oleinick P. ..... Canandaigua
Coyne, Martin J. ..... Geneva
Crain, Irving J. ..... Brooklyn
Cramer, Irving ..... Utica
Crowther, John A. ..... Honeoye
Curley, Robert T. ..... Brooklyn
Cutler, Martin ..... Brooklyn
Davis, William B. ..... New York
Deutschman, Reynold P. ..... Bronx
Falk, Abraham ..... Batavia
Finkle, Theodore H. ..... Woodmere, L. I.
Fisher, Vincent E. ..... Rochester
Friedman, Alexander W. ..... New York
Friend, Maurice R. ..... New York
Galdston, Morton ..... Long Island
Geiger, William ..... New York
Gelband, Samuel ..... Brooklyn
Gelber, Julius ..... Brooklyn
Geringer, Benjamin ..... New York
Germain, Alton A. ..... Buffalo
Germaine, Aaron H. ..... Brooklyn
Giacomini, Antonio J. ..... Bath
Giganti, Biagio F. ..... Elmhurst, Queens

New York—Continued

Gilbert, Earl S. ..... Buffalo
Gold, Theodore ..... New York
Goldberg, Norman L. ..... New York
Goldfein, Joseph ..... Mount Vernon
Goldstein, Daniel L. ..... New York
Graham, Joseph A. ..... New York
Grobstein, Herman J. ..... Brooklyn
Grynbaum, Bruce B. ..... New York
Isaacson, Philip A. ..... Brooklyn
Kantor, George J. ..... Brooklyn
Kleeman, August M. Jr. ..... Warwick
Klein, Charles ..... Bronx
Kleinfeld, Morris ..... Brooklyn
Knight, George G. ..... Piermont
Koch, James ..... Long Island
Kopins, Howard J. ..... New Rochelle
Kostant, George H. ..... Brooklyn
Kriz, Joseph R. ..... Elmhurst, L. I.
Latteri, Francis S. ..... New York
May, Renwick, C. ..... Cornwall-on-Hudson
Mazza, Peter A. ..... Mount Vernon
Mendelson, Max M. ..... New York
Mendlowitz, Milton ..... New York
Mensch, Saul A. ..... New York
Merolla, Edwin F. ..... Brooklyn
Michael, Sidney R. ..... Lynbrook, L. I.
Miller, Jay W. ..... Syracuse
Moyce, Robert W. ..... Buffalo
Nathan, Louis ..... New York
Norman, Abraham ..... New York
O'Brien, Richard B. ..... Albany
Oppenheim, Elliott ..... Brooklyn
Palmisano, Aldo N. ..... Jamaica, L. I.
Peck, William K. ..... Carthage
Petras, Michael ..... New York
Poller, Sam ..... White Plains
Reuben, Richard N. ..... New York
Rhodes, Harry Jr. ..... New Rochelle
Ries, William H. ..... Lodi
Robb, Samuel A. ..... New York
Robbin, Sidney ..... Jackson Heights
Roberts, Arthur J. D. ..... Bronx
Roberts, Milton ..... Brooklyn
Roberts, Norbert J. ..... Buffalo
Roesch, Charles B. ..... Centerport, L. I.
Roland, Paul S. ..... New York
Rosenthal, Norman ..... Brooklyn
Ross, Bernard ..... South Bronx
Rothman, Harold ..... Brooklyn
Sasson, Leon ..... New York
Schmerer, Frederick ..... New York
Segel, Nathan P. ..... Buffalo
Severy, Wendell L. ..... New York
Shay, John F. ..... Binghampton
Simon, David ..... Brooklyn
Slepian, Alexander ..... Buffalo
Sober, Samuel ..... New York
Sokolowicz, Zundel ..... Rockville Centre
Turner, Milton ..... Ridgewood
Turner, Seymour ..... Brooklyn
Wagner, Bernard ..... Brooklyn
Wexler, Louis ..... Buffalo
Whalen, Gerald F. ..... White Plains
Williams, Michael D. ..... New York
Wolk, Sidney ..... Brooklyn
Young, Dennison ..... Jamaica, L. I.
Zuckerman, Sidney ..... New York

North Carolina

Blair, James S. ..... Gastonia
Creech, Lemuel U. ..... High Point
Cromartie, William J. ..... Elizabethtown
Cuttino, John T. ..... Durham
Daniel, William W. ..... Wilson
Douglas, John M. ..... Davidson
Durham, William R. ..... Oteen
Gilliam, Robert L. ..... Raleigh
Johnston, Harold W. ..... Chadbourn
Jones, Ransom J. ..... Kingston
Langmuir, Alexander D. ..... Fayetteville
Stelling, Richard N. ..... Greensboro
Thompson, William N. ..... Raleigh
Turner, Larry ..... Rocky Mount

PHYSICIANS SEPARATED FROM SERVICE

North Dakota

Olson, Earl J.....Keene

Ohio

Baker, William D.....Shreve
Barry, Ray W.....Cleveland
Berman, Alvin L.....Cleveland
Besserglick, Irving.....Cleveland
Bilsky, Harold B.....Cleveland Heights
Blackledge, Ord C.....Cleveland
Brickley, Daniel Webster Jr.....Marion
Broh-Kahn, Robert H.....Cincinnati
Caldwell, James S.....Cincinnati
Campbell, Samuel J.....Bucyrus
Cassell, Edward F. Jr.....Dayton
Conn, James J.....Columbus
Craddock, William H.....Cincinnati
Cramer, Chester O.....Columbus
Crist, Jerry O.....Centerburg
Gans, Jerome A.....Cleveland Heights
Geer, Joseph A.....Lancaster
Goodman, Milton L.....Columbus
Goodman, Seabury.....Cleveland
Greene, Joseph C.....Cleveland
Grove, Paul D.....Cincinnati
Hohf, Jerome C.....Cleveland
Kaufman, Victor E. Jr.....Canton
Levin, Isadore L.....Lorain
McIlroy, George H.....Cincinnati
Marshall, Merritt K.....Columbus
Martin, Morris B.....Springfield
Martz, Raymond W.....Hamilton
Matuszewski, Stanley J.....Cleveland
Neher, Royal G.....Lima
Owens, William I.....Shadyside
Pickett, Robert E.....Columbus
Pierpont, Howard C.....Marietta
Reed, John R.....Cleveland Heights
Roberts, David J.....Akron
Rupp, Edson C. Jr.....Granville
Tanner, Henry.....Chillicothe
Turek, Robert O.....Cleveland Heights

Oklahoma

Hackler, Harold W.....Tahlequah
Knight, William E.....Oklahoma City
Phillips, James G.....Oklahoma City
Prier, William M.....Oklahoma City
Roberts, Robert E.....Stillwater
Whiteneck, Rhonald A....Oklahoma City

Oregon

Legrand, Joseph B.....Portland
McCrae, Spencer C.....Portland
Macrobert, Robert L.....Portland
Schaefer, Otto.....Roseburg

Pennsylvania

Allen, Adam G.....Coatesville
Barto, Robert E. Jr.....Elizabethville
Berkman, Eugene F.....Monaca
Bierwirth, Robert E.....Forest Hills
Bowers, Frank C.....Erie
Cohen, Archibald C.....Pittsburgh
Cohen, Reuben J.....Philadelphia
Coleman, Thomas H.....Carbondale
Corrado, Albert G.....Connellsville
Cox, Paul A.....Newville
Crothers, Kenneth J.....Chester
De Long, Philip L.....Bala-Cynwyd
Doane, John H.....Trucksville
Feinberg, Albert R.....Wilkes-Barre
Fischer, Herman.....Philadelphia
Frohner, Richard N.....Philadelphia
Furlong, John H. Jr.....Chester
Gamba, Carl L.....Williamsport
Gollings, Richard H.....Pittsburgh
Goshen, Charles E.....Juniata, Altoona
Kapcar, Albert D.....Fredericktown
Kerry, Marshall.....Reading
Kinsey, William C.....Evans City
Koenig, Theodore R.....Knox
Kohler, Henry J.....Philadelphia
Laubach, Charles A. Jr.....Berwick
McHugh, John B.....Summit Hill

Pennsylvania—Continued

Marks, Morton.....Philadelphia
Martin, John A.....New Bethlehem
Matsko, Michael E.....McAdoo
Medof, Milton I.....Pittsburgh
Melenson, David M.....Philadelphia
Meltzer, David.....Philadelphia
Oxman, Morris F.....Philadelphia
Pearce, Rowan C. Jr.....Bala-Cynwyd
Pennypacker, Charles S.....Ardmore
Rhoads, Donald Z.....Allentown
Ricchiuti, Amerigo G.....Mahanoy City
Robinson, Joseph P.....Williamsport
Rose, Frederick A.....Erie
Rosenberg, Albert A.....East Pittsburgh
Rouse, Paul V.....Dushore
Shellman, Alexander.....Olyphant
Simonson, Leo H.....Luzerne
Smith, Albert E. III.....Philadelphia
Srodes, William G.....Pittsburgh
Steinberg, Edgar I.....Philadelphia
Townsend, William H.....Homestead
Ulshafer, Thomas R.....Nesquehoning
Werts, Kenneth G.....Westport
Winham, Arthur J. Jr.....Davids
Yoder, Robert D...Aspinwall, Pittsburgh

Rhode Island

Blazar, Howard A.....Providence
Cotter, Thomas P.....Providence
Lewis, Robert V.....Pawtucket
Trott, Raymond H.....Providence

South Carolina

Brunson, George W. Jr.....Columbia
Jennings, Douglas Jr.....Bennettsville
Murrah, Thomas A. III.....Union
Turner, James D.....Winnsboro

South Dakota

Cunningham, Robert S.....Sioux Falls
Merryman, Murlin P.....Rapid City
Stokes, Harold A.....Aberdeen
Van Heubelen, Gerald J.....Pierre

Tennessee

Blau, Leslie.....Johnson City
Calhoun, Harold W.....Memphis
Colsky, Jake.....Memphis
Crawford, John K.....Somerville
Fowler, Samuel B.....Hendersonville
Goltman, Jack S.....Memphis
Griffith, John W. Jr.....Nashville
Morris, Al Kelly.....Fork Mountain
Ogle, Homer C.....Sevierville
Olsen, Edward G.....Knoxville
Palmer, Jeffress G.....Chattanooga
Thornton, John C. Jr.....Brownsville
Truex, Spencer A. Jr.....Jackson

Texas

Addy, Ervin E. Jr.....Canton
Black, Walter A.....Waco
Causey, Emmett G.....El Paso
Cochran, Leroy M.....Amarillo
Corson, Wesley C.....Amarillo
Cox, Charles H. Jr.....Temple
Coxe, Lemuel F.....Houston
Crim, Earl T.....Greenville
Crow, Jack A.....Abilene
Deatherage, William R.....Dallas
Heatly, Maurice D.....San Marcos
Johnson, James H. Jr.....Dallas
Kinder, Thurman A.....Brownsville
Koontz, Arch C.....Woodsboro
Livingston, Charles S.....San Antonio
McKinnon, John B. Jr.....Long View
Mast, John R.....Wichita Falls
Muirhead, Samuel J.....Dallas
Pokorny, Alex D.....Taylor
Quay, John E.....Waco
Rice, Maurice M.....San Antonio
Rodgers, Lawrence R.....Amarillo
Smith, William C.....Anna
Waller, Alvin L.....Woodville
Williams, Philip T. Jr.....Port Arthur

Utah

Call, Richard A.....Logan
Wedell, William J.....Ogden

Vermont

Gage, Terence F.....Vergennes
Johnstone, Robert E.....Burlington

Virginia

Bird, Robert M.....University
Butler, Henry L.....Hampton
Byrd, Allen L.....Danville
Candler, Paul K.....Reedville
Crichton, Robert B.....Arlington
Dougherty, Clyde H.....Franklin
Face, Edward G. Jr.....Norfolk
Harrell, William F. Jr.....Portsmouth
Horgan, Edmund.....Delaplane
Jamison, King A.....Blacksburg
Kolze, Vernon W.....Alexandria
Leper, Mark H.....Alexandria
Lewis, Augustine W. Jr.....Aylett
McCown, Albert S.....Alexandria
McKnew, Hector C.....Arlington
Michaux, Richard A.....Michaux
Palmer, John C.....Roanoke
Pogue, Elbert H.....Redford
Potter, Harold W.....Newport News
Renick, Fred T.....Callaway
Roberts, Ernest S.....Hampton
Robinson, Robert F.....Hampton
Smith, Charles E.....Alexandria
Tice, William P.....Roanoke
Trice, Clarry C.....Richmond
Tyson, William R.....Norfolk
Vermilya, Walter E.....Clifton Forge
Wager, Harold E.....Charlottesville
Woodson, Frederick G.....Roanoke
Wysor, Edwin S.....Clifton Forge

Washington

Brown, John L.....Lynden
Cox, Troy V. Jr.....Seattle
Gianelli, Salver A.....Burien
Goering, William H.....Tacoma
Hepfer, Penrod G.....Seattle
Marsh, Norman E.....Chehalis
Newcomb, Wendell J.....Seattle
Pollock, Leon E.....Rosalia
Stevens, Glenn E.....Okanogan
Underhill, Frank J.....Seattle

West Virginia

Burke, John H.....Elbert
Coplin, Robert W.....Huntington
Crites, John L.....Charleston
Douglas, Paul L.....Charleston
Gaydosh, Michael A. Jr.....Wheeling
Grubb, George L.....Charleston
Trotter, Robert R.....Morgantown
Yost, Ernest Lee.....Fairmont

Wisconsin

Drake, William L. Jr.....Milwaukee
Egan, Gregory J. Jr.....La Crosse
Hildebrand, James F.....Sheboygan
Johnson, Herbert C.....Racine
Kah, William W.....Milwaukee
Kohler, Homer H.....Madison
McMillan, John A.....Milwaukee
Martin, Harold E.....Dale
Murphy, Charles P.....Waukesha
Postorino, Joseph D.....Racine
Prusa, Victor H.....Merrillan
Rouse, John J.....Hillsboro
Rowlands, Owen B.....Waukesha
Schrank, Leonard W.....Grafton
Schroeder, Irvin L.....Milwaukee
Williamson, Carl S.....Green Bay

Wyoming

Glotfelty, James S.....Sheridan
Stone, Calvin F.....Cheyenne

Hawaii

Clock, Wah T.....Hilo, Hawaii

NAVY

GRADUATE MEDICAL AND TECHNICAL TRAINING

Approved residency training is being conducted in the major specialties at the naval hospitals at Bethesda, Md., Chelsea, Mass., Great Lakes, Ill., Long Beach, Calif., Oakland, Calif., Philadelphia, St. Albans, N. Y., and San Diego, Calif. A few other naval hospitals are also being used for training in obstetrics and gynecology. These hospitals were surveyed by the Council on Medical Education and Hospitals of the American Medical Association and action for full or limited approval of various training programs has since been taken by the Council in cooperation with the respective specialty boards.

In the organization of the Graduate Medical Training Program, a board of consultants to the Bureau of Medicine and Surgery was appointed, made up of members representing each of the major specialties and the Council on Medical Education and Hospitals, in order to provide closer liaison between the Council, the American specialty boards and the Navy, and to assist the Navy in establishing a program which would provide training to meet the requirements of the Council and the specialty boards. As the program progressed, consultants to the various teaching hospitals were appointed to supplement the staffs where American board members were not available in sufficient number to carry on the teaching. These consultants are giving as freely of their time as it is possible for them to do.

Residency training is being carried out in anesthesiology, dermatology and syphilology, internal medicine, neurosurgery, obstetrics-gynecology, ophthalmology, orthopedics, otolaryngology, pathology, pediatrics, psychiatry and neurology, radiology, surgery, thoracic surgery and urology. As of May 1, 1947, 152 medical officers were in residency training in naval hospitals in these specialties.

The basic sciences, as required in residency training and in the preparation for examination by the American specialty boards, are being taught in a ten months course at the Naval Medical School, Bethesda, Md. At the St. Albans naval hospital the residents are obtaining their basic sciences at New York University College of Medicine; those at Chelsea naval hospital receive them at Harvard Medical School, and those at the Long Beach naval hospital at the University of California (Southern Branch). Residents in hospitals where the basic sciences are deficient will be sent to civilian institutions or to naval hospitals where they are available later in their training period.

Ninety-two medical officers are receiving residencies, courses or fellowships in civilian institutions, such as the Lahey Clinic, Mayo Clinic, Northwestern University, Tulane University, Duke University, University of Pennsylvania, University of Michigan, Memorial Hospital (New York) and Henry Ford Hospital (Detroit).

The Medical Department of the Navy has 98 nurses in training in anesthesiology, dietetics, occupational therapy, physical therapy, psychiatric nursing and teaching and ward administration in courses at the University of Utah School of Medicine, Baylor University Hospital, University Hospitals (Cleveland), George Washington University, Medical College of Virginia, Pennsylvania Hospital (Philadelphia) and Teachers College, Columbia University (New York).

Fifty-one Hospital Corps officers are in training in sanitation, venereal disease and rodent control, law, accountancy and business administration, personnel administration, federal budgetary administration and hospital administration. Twelve hundred and ninety-one enlisted men are receiving training in aviation medicine, clerical procedures, clinical laboratory, commissary, dermatology and syphilology, diving, duplication technic, electrocardiology and basal metabolism, electroencephalography, fever therapy, malariology, medical photography, medical repair service, neuropsychiatric nursing, neuropsychiatric clerical, operating room technic, property and accounting, physical therapy, occupational therapy, spectacle dispensing, submarine training, x-ray and photofluorography, basic hospital corps instruction and intermediate course.

The audiovisual training section of the Bureau of Medicine and Surgery has in progress a series of curriculum integrated films to be used in conjunction with the Graduate Medical Training Program. While the first of these films will be in the field of basic sciences, later, it is planned to include clinical subjects.

NAVY AWARDS AND COMMENDATIONS

Vice Admiral Ross T. McIntire

The United States of America Typhus Commission Medal has been awarded to Vice Admiral Ross T. McIntire (MC), U.S.N. (retired), who as Surgeon General of the Navy rendered exceptionally meritorious service as a member of the United States of America Typhus Commission from August 1942 to June 30, 1946. The citation adds that through his expert knowledge he contributed to the formulation and operation of the commission's research and control of typhus fever in all theaters of operation. In the midst of responsibility of high governmental positions he had the problems of typhus and the utilization of the commission constantly in mind and helped to make it an effective means of controlling the spread of typhus and protecting the health of military and civilian personnel. His services increased his distinguished leadership in preventive medicine. Dr. McIntire graduated from Willamette University Medical Department, Salem, Ore., in 1912 and entered the military service May 23, 1917.

Rear Admiral Morton D. Willcutts

Read Admiral Morton D. Willcutts (MC), has been awarded the Navy Commendation Ribbon for outstanding service rendered during World War II. The citation reads in part as follows: For outstanding service as medical officer in charge of the Naval Hospital, San Diego, Calif., from June 20, 1943 to March 7, 1945. Commodore Willcutts ably directed the handling of thousands of Navy, Marine Corps and Coast Guard casualties during this period. By his professional skill and initiative in evacuating war casualties to other American hospitals and in returning physically qualified men to active duty, he maintained facilities for receiving incoming cases. His devotion to duty throughout was a contributing factor in the success of the hospital's mission and reflects the highest credit on himself and the Naval Service. Dr. Willcutts graduated from the Indiana University Medical College in 1916 and entered the naval service in 1917.

Captain George Brackett Dowling

Capt. George Brackett Dowling (MC), U.S.N., has been awarded the Honorary Officer of the Military Division of the Most Excellent Order of the British Empire. The citation makes clear that Captain Dowling was responsible for the medical arrangements for the part played by the United States Navy in the invasion of Normandy. He subsequently served in the Research Department of the Bureau of Medicine. His wholehearted cooperation with his many British colleagues was outstanding, and he was an energetic and firm supporter of United States-British liaison. He was of the greatest assistance to the British naval medical authorities both in the United Kingdom and in the United States, and his services to the Allied cause were of the greatest value. Dr. Dowling graduated from George Washington University Medical School in 1917 and entered the military service in July 1917.

Captains Brunson, Hubbard and Terry Commended

Capt. Clyde W. Brunson (MC), medical officer in command, U. S. Naval Hospital, Houston, Texas, has received a special commendation by Rear Admiral Clifford A. Swanson, Surgeon General, for the part he played in directing help to both Texas City and the hospitals in Galveston during the April 16 disaster. The commendation reads in part that, by exercise of sound judgment when the call came for help, Captain Brunson immediately dispatched ambulances, medical officers, dental officers, nurses, corpsmen and first aid equipment within twenty minutes.

Thus medical personnel and supplies arrived in Texas City in time to play a very important role in caring for the injured during the first few hours and was the first military organization at the fire. Not only did he dispatch other personnel to Texas City and to the hospital at Galveston, but his foresight in makirg available 500 beds for the injured, the method by which he continually dispensed supplies to that area as long as was needed, and the manner in which he continued to carry out his duties at the hospital, although short of personnel, is worthy of mention. Dr. Brunson graduated from the University of Pennsylvania Medical School in 1918 and entered the naval service in 1918.

For his outstanding performance of duty as the medical officer in command, U. S. Naval Hospital, Corpus Christi, Texas, during the Texas City disaster of April 16 Capt. H. D. Hubbard (MC), has received a special commendation by the Surgeon General of the Navy, Rear Admiral Clifford A. Swanson. The commendation reads, in part, that by the exercise of sound judgment on the part of Captain Hubbard, when the call came from the stricken city for help and when two navy planes were made available he dispatched medical officers, nurses, hospital corpsmen and supplies to the scene of the disaster, so that the medical personnel and supplies arrived at Texas City in time to play an important role in caring for the injured. Dr. Hubbard graduated from the University of Southern California Medical School in 1917 and entered the naval services in November 1917.

For outstanding performance of duty as medical officer in charge of the Naval Hospital, Houston, Texas, first aid group during the Texas City disaster April 16, 1947, Capt. Charles C. Terry (MC), has received a special commendation from the Surgeon General which reads in part as follows: The efficient and capable manner in which Captain Terry established casualty stations in the disaster area and directed the care of the injured and removal of the dead under hazardous conditions of fire and poison gases contributed in large measure toward overcoming the ill effects of this unfortunate event. He demonstrated outstanding professional ability and resourcefulness and it is considered that, as a result of his prompt and sound judgment in shifting his casualty stations and clearing the adjcent areas of all civilian and naval personnel, many lives were saved that would have otherwise been lost through the effects of subsequent explosions. Dr. Terry graduated from the University of Michigan Medical School in 1927 and entered the naval service in 1942.

Commander Robert Allan Phillips

Comdr. Robert Allan Phillips (MC), U.S.N., has been awarded the Honorary Member of the Military Division of the Most Excellent Order of the British Empire. Commander Phillips, in collaboration with Dr. Donald D. Van Slyke at the Rockefeller Institute for Medical Research, was credited in the citation for being responsible for development of an excellent and simple technic for rapid examinations of the blood in patients suffering from shock. Early information on this method was made available to British medical circles, and it proved of inestimable value in the treatment of the British wounded in Africa, Italy, Northwest Europe and Southeast Asia. Dr. Phillips graduated from Washington University School of Medicine, St. Louis, in 1929 and entered the military service in 1940.

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Ford, Hugh G.....Auburn
Vaughn, Robert H.....Tuskegee

California

Bierman, Howard R.....Oakland
Bishop, John A.....San Jose
Closson, Harold O.....San Francisco
Derby, Richard.....San Francisco
Karr, Norman W.....San Francisco
Ferguson, Russell S.....San Francisco
Heitman, Claire E.....Los Angeles
Reed, Karl A.....San Francisco
Reich, August.....San Francisco
Spohn, Eugene L.....San Francisco

Colorado

Nelson, James M.....Aurora

Florida

Simmons, Samuel J.....Belle Glade
Wilhoit, William M. C.....Quincy

Georgia

Daniel, Ernest F. Jr.....Millen

Illinois

Bell, John L.....Aurora
Greider, Jack L.....Decatur
Hershenhouse, Samuel B.....Chicago
Moffett, Howard F.....Savanna
Rulison, Clyde A.....Paxton

Indiana

Mitchel, James A.....Winona Lake
Smith, Marsh H.....West Lafayette

Iowa

Frey, Harry.....Fairfield

Massachusetts

Genest, Aloria H.....Aldenville
Sommer, Francis X. Jr.....Ashburnham

Massachusetts—Continued

Swift, William H.....Taunton
Wood, Dwight R.....Braintree

Michigan

Graham, Walter L. Jr.....Detroit

Mississippi

Bologna, Anthony N.....Shaw
Brooks, Thomas J. Jr.....Oxford

Missouri

Derrington, Albert E.....Kansas City

New Jersey

Harris, Carl A.....Cedar Grove
Jancsics, Mathew J. Jr.....Newark
Riley, Richard L.....Madison
Wells, William C. V.....Delanco
Wujciak, Henry J.....Newark

New York

Basilicato, Gennaro.....Brooklyn
Cassone, Peter G.....Port Chester
Divine, Walter E.....Brooklyn
Foote, Edward L.....Sunmount
Kehr, Fred W.....Olean
Kellogg, Ralph H.....Saratoga Springs
Livshin, Norman.....Syracuse
Peck, John M.....Walden
Sandler, Benjamin P.....Bronx
St. Mary, John T.....Malone
Vorwald, Arthur J.....Saranac Lake

Ohio

Ecker, Paul G.....Cleveland
Riemenschneider, Paul A.....Berea
Weintraub, Josef D.....Cincinnati

Pennsylvania

Callen, Harold S.....Bradford
Cunningham, Raymond F.....Camp Hill
Ellis, Matthews J. M.....Bryn Mawr

Pennsylvania—Continued

Forbes, Harry M.....Chester
Giffin, Herbert M.....Philadelphia
Goldstein, Eli W.....Pittsburgh
Isard, Harold J.....Philadelphia
McCune, William W.....McKeesport

Rhode Island

Gobeille, Alfred B.....Hope Valley

Texas

Bell, Frederic W.....San Antonio
McCurdy, Marion W.....San Antonio
Smotherman, Ervin R.....Hillsboro

Utah

Brooke, Wallace S.....Salt Lake City
Callister, Thomas K.....Salt Lake City
Daines, William P.....Salt Lake City
Jenson, Harold S.....Salt Lake City
Kearns, Grant F.....Ogden
Nielsen, Orville F.....Huntsville
Openshaw, Calvin R.....Salt Lake City
Sears, Richard H.....Minti

Vermont

Glass, Walter M.....Burlington

Virginia

McCosh, James N. Jr.....Alexandria
McNeely, Robert E. L.....Danville

Washington

Friend, LeRoy F.....Seattle

Wisconsin

Johnson, Henry T. Jr.....Appleton

Canada

Fuller, Frank D.....Verdum, P. Q.

VETERANS ADMINISTRATION

CONSOLIDATE THREE HOSPITALS

To economize in its use of doctors and nurses, the Veterans Administration has ordered consolidation of three "emergency" hospitals and transfer of 659 patients to better equipped structures. Two of the hospitals are temporary wooden wartime plants acquired as surplus from the Army and Navy. The third was leased from New York State. The shift in medical personnel will permit the Veterans Administration to open sufficient wards in its larger hospitals to offset the loss in beds. The move is expected to produce economies also in maintenance and administrative costs. The three hospitals to be consolidated are:

1. Sampson, N. Y., where 366 veterans suffering from tuberculosis are receiving treatment. These patients will be moved to the Veterans Administration hospital at Staten Island, N. Y.

2. Saratoga Springs, N. Y., where 45 general medical and surgical patients are hospitalized. These patients will be transferred to other Veterans Administration hospitals in New York state, including Brooklyn, Batavia, Bath and the Bronx. The Saratoga hospital was considered too small for economical operation.

3. Thomasville, Ga. The 248 general medical and surgical patients will be transferred to other Veterans Administration hospitals in that area. Staff shortages have prevented the Veterans Administration from operating this hospital to its full capacity.

The Sampson hospital is at the Navy's former training station on Lake Seneca. The plant will be turned back to the Navy Department for disposal. The Veterans Administration experienced difficulty in staffing its Sampson hospital with sufficient nurses.

The Thomasville hospital is the Army's former Finney General Hospital. The decision to transfer patients from this hospital results from the inability of the Veterans Administration to staff it with sufficient nurses. Employees of the three institutions will be urged to transfer to other Veterans Administration hospitals.

AUTOMOBILES FOR AMPUTEES

More than 15,000 World War II veterans who lost, or lost the use of, one or both legs had been certified as eligible under Public Law 663 to receive automobiles or other conveyances at government expense by the end of April. Of these more than 11,500 had made sales agreements with dealers for cars averaging $1,588 each, or $12 under the maximum allowable cost of $1,600. Although disabled veterans may obtain other conveyances as well as passenger cars, more than 99 per cent applied for automobiles. The appropriation for conveyances for disabled veterans authorized by Congress expired June 30.

Such disabled World War II veterans and paraplegics who obtained free automobiles from the government are receiving driving lessons from American Red Cross volunteers in cities throughout the United States; in addition, a driver-training program has been in effect in California as a cooperative project of the Red Cross, American Legion Auxiliary and the Bureau of Motor Vehicles. Although the law requires disabled veterans to hold current drivers' licenses before applying for new cars, many servicemen otherwise eligible had never driven automobiles before, and all are unfamiliar with the special handicap control appliances. The driver-training programs are designed to teach them to operate their automobile well enough to pass state driving tests and obtain state licenses.

VETERANS OF PREVIOUS WARS

During April, 105,691 veteran patients were under the care of the Veterans Administration, and of these 5 were veterans of the Civil War, 2,836 veterans of the Spanish American War, 48,340 veterans of World War I and 51,273 veterans of World War II. Patients from the regular military establishment numbered 2,808, 234 patients were retired officers and enlisted men and 195 were veterans of the Philippine Insurrection, Indian wars and lesser periods of conflict. All veterans with disabilities incurred in or aggravated by service in the armed forces are eligible for hospital care by the Veterans Administration. Veterans with non-service connected ailments may be hospitalized if beds are available and are not needed for service connected cases, and if they say they cannot pay for treatment elsewhere.

PUBLIC HEALTH OFFICERS AND THE G. I. BILL

Commissioned officers of the U. S. Public Health Service who were assigned to and served with the armed forces during World War II and are now back on duty with the Public Health Service are eligible for benefits of the G. I. bill, Veterans Administration has announced. These benefits include education or training; subsistence allowances for those in education or training, and loan guaranties for home, farm or business purposes.

The ruling was based on the case of a Public Health Service officer who served with the Coast Guard from March 1942 until January 1943, when he reverted to civilian status and returned to the Public Health Service, where he still is on duty. His military service was performed under an executive order, issued Dec. 31, 1941, in which the President directed that commissioned officers of the Public Health Service on duty with the Coast Guard shall constitute a part of the U. S. naval forces. This service was performed before the President issued the executive order, effective July 29, 1945, in which he declared the entire "commissioned corps of the Public Health Service to be a military service and a branch of the land and naval forces of the United States during the period of the present war."

The Veterans Administration has ruled that these officers are eligible to receive benefits under the G. I. bill if their release from service with the Army, Navy or Coast Guard is under other than dishonorable conditions and they otherwise meet the requirements of that act.

PERSONAL

Dr. Peter Ver Meulen has been appointed to serve as medical officer for the Veterans Administration in the upper peninsula at Escanaba, Mich. For several years Dr. Ver Meulen served the Veterans Administration at Sioux Falls, S. D.

Dr. Horace B. Cupp has been appointed manager and chief medical officer of the Lawson Veterans Administration hospital, Atlanta, Ga. Dr. Cupp formerly served at the veterans' hospital at Mountain Home, Tennessee.

Dr. Samuel A. Schuyler, New York, has been appointed chief medical officer of the Connecticut regional office of the Veterans Administration. Dr. Schuyler is a graduate of the University of London School of Medicine, a veteran of World War II and formerly was deputy medical administrator of Queen's General Hospital, Jamaica, L. I.

Dr. L. E. Bovik, Waukegan, Ill., has gone to Butler, Pa., to become chief of the surgical service at the veterans' hospital. Dr. Bovik served in both the first and second world wars.

MISCELLANEOUS

SALE OF SURPLUS GOVERNMENT PROPERTY

The War Assets Administration is conducting sales of surplus government property announced by the following regional offices. Physicians who are veterans have certain prioritics in the purchase of this government property.

Regional Office, 501 W. O. W. Building, Omaha. Sale of hospital laboratory equipment and supplies including anesthesia apparatus, oxygen apparatus, hospital bed screens, bedside tables and invalid chairs.

Regional Office, Twelfth and Spruce Street, St. Louis, sale of x-ray units, stereoscopes, cystoscopes and dental chairs. Sale opened June 5 and is continuous.

Regional Office, 699 Ponce de Leon Avenue N.E., Atlanta 5, Ga. Sale of drugs, medical supplies and hospital equipment. Sale opened June 9 and is continuous.

Medical News

(Physicians will confer a favor by sending for this department items of news of general interest: such as rebate to society activities, new hospitals, education and public health. Programs should be received at least two weeks before the date of meeting.)

CALIFORNIA

Changes in Health Officers.—Dr. Harvey F. Hendrickson is leaving the California State Department of Health as of June 30 for health reasons. Dr. Hendrickson is a colonel in the medical corps of the regular army, retired, rather than major as stated in THE JOURNAL, May 31.

Cancer Research Unit Opens.—A cancer research unit has been established in San Francisco at the Laguna Honda Home sponsored jointly by the United States Public Health Service and the University of California Medical School. The research program will include problems of (1) electronic characteristics of normal and malignant growth, (2) physiologic changes in patients with cancer, (3) experimental clinical chemotherapy of cancer and (4) characteristics of human malignant tissues. The laboratory will be under the direction of Dr. Michael B. Shimkin, passed assistant surgeon, U. S. Public Health Service, and member of the staff of the National Cancer Institute, Bethesda, Md., and his associate Dr. Howard R. Bierman, recently Commander (U. S. N. R.) Naval Medical Research Institute, Bethesda, Md.

CONNECTICUT

Increase in Diphtheria.—Over the past nine years diphtheria in Connecticut reached a very low level. Connecticut had 36 cases in 1941, with no deaths. In 1946, however, there were 72 cases and 6 deaths in the state. The state department of health advises immunization for its control.

State Appointments.—The governor has announced the appointment of Dr. H. Bruno Arnold, New Haven, to the State Board of Examiners for Physiotherapy Technicians, and the reappointment of Dr. Joseph H. Howard, Bridgeport, to the Commission on the Care of the Chronically Ill, Aged and Infirm.

Personal.—At the meeting of the American Board of Neurological Surgery June 3 Dr. William J. German, New Haven, was elected secretary-treasurer of the board to succeed Dr. Paul C. Bucy, Chicago, whose term has expired.——Dr. Thomas P. Murdock, New Haven, chief, medical division, Meriden Hospital, was reelected chairman of the governing council of the Connecticut State Medical Society at the recent annual meeting.

ILLINOIS

Survey on Care of Chronically Ill Persons.—The Illinois Commission on the Care of Chronically Ill Persons has completed a 120 page report which recommends immediate action to construct adequate facilities for the chronically ill and to initiate research into the causes and cures of chronic illnesses. About 117,000 persons in Illinois are suffering from such ailments, the report said, and 35,000 require hospital care, although there are only 12,000 beds available for them. The research institute, proposed by Dr. Andrew C. Ivy, director of the University of Illinois schools of medicine, dentistry and pharmacy, would cost $2,500,000 to build.

Chicago

Dr. Furey Heads Chicago Medical Society.—At the annual dinner of the Chicago Medical Society June 18 Dr. Warren W. Furey took office as president of the society. Dr. J. Roscoe Miller, dean of Northwestern University Medical School, was made president-elect and chairman of the council, and Dr. Willard O. Thompson was reelected secretary. Dr. Malcolm T. MacEachern was honored as outgoing president.

Northwestern's Half Century Club Initiates Five.—Five members of the 1897 class of Northwestern University Medical School, all practicing physicians, received certificates of membership in the alumni association's Half Century Club at a luncheon June 16. They are Drs. James H. Davis, Carlinville, Ill.; S. Marx White, Minneapolis; Thomas H. Marsden, Fennimore, Wis.; Paul F. Morf, Chicago, and Albert J. Roberts, Ottawa, Ill.

Industrial Plants to Stop Polluting Water Supply.—Eighteen of the twenty industrial plants accused of dumping waste into Chicago's water supply have signed agreements to install disposal plants. The signatures were obtained as a result of suits instituted forty-four months ago by Attorney General George F. Barrett in a campaign to clean up Chicago's drinking water by prohibiting Indiana industrial plants from dumping sewage into Lake Michigan.

INDIANA

Personal.—Dr. Orva T. Kidder, Fort Wayne, has been appointed medical director of the Irene Byron Sanatorium, Fort Wayne, succeeding Dr. Merlin H. Draper, who had served as medical director since 1931 and who resigned to become medical consultant to the medical staff of Bay Pines Veterans Hospital, Tampa, Fla.

Medical Distribution Map.—The Indianapolis Medical Society has prepared a map 8 feet by 3 feet drawn to a scale of 4 inches to the mile, showing locations of various physicians by colored pins. The map hangs in the society office and has been especially valuable to young physicians who are interested in establishing their offices.

Immunization Program.—The Jackson County Medical Society in conjunction with the county public health nurse has completed an immunization program in which 1,850 children were immunized against diphtheria and 2,144 were vaccinated against smallpox. Cooperation of the medical society and community support were the keynotes in the program. Fifteen physicians participated. Groundwork for the immunization program was laid by an intensive educational campaign which included visits to schools by the public health nurse and state board of health consultant, who distributed immunization literature and showed films on immunization, and newspaper releases giving details of the program and urging parents to cooperate.

KANSAS

Personal.—Dr. Mark L. Bishoff, Topeka, chief surgeon of the Atchison, Topeka and Santa Fe Hospital Association, was honored at a recent dinner marking his retirement after forty-five years of service.

The Care of Premature Infants.—The state board of health has started the second phase of its program to reduce the number of deaths of premature infants in Kansas. In April twenty-six nurses from hospitals and public health departments attended a course on the care of premature infants. Assistance was given by staff members of the University of Kansas Medical and Nursing Schools and by representatives of the state and local health departments. In 1946 premature infant fatalities ranked as the ninth cause of death in Kansas, according to figures compiled by the state board of health.

MISSOURI

State Medical Election.—At the annual meeting of the Missouri State Medical Association in April Dr. Morris B. Simpson, Kansas City, became president. Drs. Robert Mueller, St. Louis, was made president-elect; Otto T. Blanke, Joplin, Sidney M. Bailey, Malden, and Donald M. Dowell, Chillicothe, vice presidents; Charles E. Hyndman, St. Louis, treasurer, and William A. Bloom, Fayette, secretary. The next annual meeting will be held in St. Louis.

NEW YORK

Fifteen Fifty Year Physicians Honored.—Fifteen Monroe County physicians who have practiced medicine for fifty years or more were honored at the annual meeting of the state medical society in Buffalo, May 5-9, when they received certificates at special ceremonies. These physicians are Drs. William B. Cochrane, Clifford V. C. Comfort, James C. Davis, Arthur M. Johnson, Montgomery E. Leary, Frank B. Maynard, Nathan D. McDowell, Charles Reitz, Alvah C. Remington, Joseph Roby, Jeremiah H. Sullivan, John M. Swan, Vallance A. Wickens, Charles D. Young, all of Rochester, and Horace J. Mann, Brockport.

New York City

University News.—Dr. John M. Lore, clinical professor of otorhinolaryngology, New York University College of Medicine, is the new president of the College Alumni Association.

Hospital Under Construction.—An addition to the Jewish Sanitarium and Hospital for Chronic Diseases now under construction will add 250 beds, making a total of 791. The addition will make the hospital one of the largest nonprofit voluntary hospitals for chronic diseases in the country. The

six story building will include an entire floor for the management of acute illnesses and one to be devoted entirely to laboratories for routine hospital requirements as well as for research. Equipment for superficial and high voltage therapy and for hydrotherapy will be added.

Adler Memorial Meeting.—The Alfred Adler Medical Society of New York and the Individual Psychology Association, New York, held a memorial meeting May 26 observing the tenth anniversary of the death of Alfred Adler. The principal speakers were Dr. Frank L. Babbott, former president, Long Island College of Medicine, Brooklyn, who spoke on "Personal Recollections of Alfred Adler," and Heinz L. Ansbacher, Ph.D., associate professor of psychology, University of Vermont and State Agricultural College, Burlington, whose subject was "Alfred Adler's Place in Psychology Today."

Dr. Ginzburg Made Director of Surgery.—Beth Israel Hospital, 16th Street and Stuyvesant Park East, announces the appointment of Dr. Leon Ginzburg as director of surgery, effective October 1. A native New Yorker, Dr. Ginzburg graduated from the Columbia University College of Physicians and Surgeons in 1920 and continued his education abroad under an Emanuel Libman fellowship in surgery and pathology. During the war Dr. Ginzburg served as assistant chief of the surgical service of the Third General Hospital and as chief of the surgical service of the 235th General Hospital and the 25th General Hospital of the U. S. Army.

Dr. Lanza Appointed Professor of Industrial Medicine.—Officials of New York University College of Medicine, New York, recently inaugurated the Institute of Industrial and Social Medicine as a unit of its New York University-Bellevue Medical Center and announced that Dr. Anthony J. Lanza, New York, one of the nation's leading authorities in the field of industrial health, will join the institute as professor of industrial medicine. The dual announcement came at a luncheon June 3 at the Harvard Club, attended by medical directors of some of the nation's largest industries. A veteran of both world wars, Dr. Lanza holds the Legion of Merit and in 1946 received the William S. Knudsen award for the most significant contribution to the field of medicine. He is associate medical director of the Metropolitan Life Insurance Company. Dean Currier McEwen, New York University College of Medicine, said that the institute will offer training for both professional and lay workers and will award appropriate degrees. In conjunction with the institute a new general group practice clinic, staffed by members of the college faculty, will be set up. The general clinic, which will be in operation by next fall, he said, will offer to wage earners a comprehensive program of medical care. He added that there will also be offered a graduate program, not only to qualified physicians, but to others wishing to specialize in the field. The institute will also offer industry special services covering research in toxicology, physiology, worker psychology and tropical medicine. Dean McEwen announced that Dr. Lanza will voluntarily give half time service until the end of 1948, after which he will be able to devote his full time to the new program. He will act as co-director of the institute with Dr. Henry E. Meleney, professor of preventive medicine, New York University College of Medicine, New York.

OHIO

Narcotic Violation.—The Bureau of Narcotics, Washington, D. C., reports that Dr. Guy W. Fishbaugh, 3759½ Rhodes Avenue, New Boston, pleaded guilty at Cincinnati to violation of the federal narcotic law and on April 2 was placed on probation for a period of two years.

Professors to Conduct Investigation in Japan.—Dr. Katharine Dodd, associate professor of pediatrics, and Dr. Samuel Rapoport, assistant professor of pediatrics, University of Cincinnati College of Medicine, arrived in Japan the first of June on a U. S. Public Health research assignment. They will spend most of their time this summer in Tokyo investigating an acute diarrheal disease known as "ekiri."

Research in Children's Diseases.—Western Reserve University School of Medicine, Cleveland, has received a ten year grant of $250,000 from the Brush Foundation for the study of the effect of infectious diseases on infants and children. The study will be made in the department of preventive medicine headed by Dr. John H. Dingle, who will be aided by four of his associates: Drs. George F. Badger, associate professor of biostatics, and Richard G. Hodges, Charles H. Rammelkamp Jr. and Otto E. Feller, assistant professors. Delayed effects of infectious diseases will be studied in a preventive medicine clinic to be established.

Professors to Lecture in Europe.—Dr. Albert B. Sabin, professor of research pediatrics, University of Cincinnati College of Medicine, will address the fourth International Congress on Microbiology in Copenhagen, Denmark, July 20-26 on "Poliomyelitis." Dr. Louis G. Herrmann, associate professor of surgery, will spend August in France, where he has been commissioned to teach in three provincial universities on "Recent Advances in Surgery." On September 8 he will address students of medicine at the University of Strasbourg. At a joint meeting in London, September 14, of the Royal College of Surgeons and the Société Internationale de Chirurgie Dr. Herrmann will give the official response to the address of Professor René Leriche, Paris, then go to the first postwar assembly of the Royal College of Surgeons of Belgium in Brussells, and thence to the fiftieth Congress of French Surgeons in Paris.

OKLAHOMA

University Appointment.—Dr. Vernon D. Cushing, for the past year resident in pathology at the University of Oklahoma Hospitals, has been appointed director of the health service of University Hospitals and Medical School and instructor in the School of Medicine. Dr. Cushing, a graduate of the University of Kansas School of Medicine, Lawrence-Kansas City, 1939, served in the army medical corps overseas in the recent war.

State Medical Election.—At the annual meeting of the Oklahoma State Medical Association May 13-16 Dr. Paul B. Champlin, Enid, was inaugurated as president. Officers elected were Dr. Clarence E. Northcutt, Ponca City surgeon, president-elect; Dr. Shade D. Neely, Muskogee urologist, vice president; Dr. Lewis J. Moorman, Oklahoma City, secretary-treasurer and editor of the state journal. Dr. Charles R. Rountree, Oklahoma City, was reelected delegate to the American Medical Association. Physicians registered numbered 675.

PENNSYLVANIA

Tuberculosis Scholarships.—Five scholarships of $300 each are being offered to young physicians, preferably those practicing in rural communities of the state, to take the graduate course at the Trudeau School of Tuberculosis at Saranac Lake, N. Y., which opens September 8 and continues for four weeks. The awards will be determined by a committee of physicians competent in the field of tuberculosis. Requests for application forms should be directed to the Pennsylvania Tuberculosis Society, 311 South Juniper Street, Philadelphia 7.

Ninth Councilor District Meeting.—At the ninth Councilor District Meeting of the Medical Society of the State of Pennsylvania at the Wanango Country Club between Oil City and Franklin, June 20, fifty year testimonials were presented to Drs. Charles A. Rogers, Freeport; Forrest J. Bovard, Tionesta; Charles R. Stevenson, Ebensburg, and John L. Hadley, Oil City (posthumously). The speakers on the scientific program included Drs. John F. Beauregard, Pittsburgh; Frank J. Gregg, assistant professor of Medicine, University of Pittsburgh School of Medicine; Russell L. Haden, Cleveland Clinic Foundation Hospital; Isador S. Ravdin, professor of surgery, University of Pennsylvania, and Moses Behrend, Philadelphia.

Philadelphia

Appoint Assistant Director of Phipps Institute.—Dr. Russell E. Teague, surgeon, U. S. Public Health Service, recently assigned to the Henry Phipps Institute of the University of Pennsylvania by the Tuberculosis Control Division of the Public Health Service, has been appointed assistant director of the institute and assistant professor of public health in the university. Dr. Teague will divide his time between his new duties at the Phipps Institute and his continuing responsibilities as consultant on tuberculosis for district 1 of the U. S. Public Health Service, which includes the New England states, New York, New Jersey, Delaware and Pennsylvania.

TEXAS

Grants Degree in Medical Art.—A degree of Master of Medical Art, the first awarded at any university, was conferred by Southwestern Medical College, Dallas, on Miss Patricia O'Neill, who has done graduate work in the medical art department during the past year. A banquet in honor of the occasion was held in the Melrose Hotel and was attended by Dallas notables in the fields of medicine and art. Many tributes were paid to Lewis Waters, Ph.G., whose self-sacrificing industry has developed the department of medical art and visual education to a unique place in medical education. Among the speakers were Dr. Edward H. Carey, emeritus professor of ophthalmology, who spoke on "Art at Southwestern."

VIRGINIA

Dr. Haag Appointed Dean.—Dr. Harvey B. Haag, professor of pharmacology, Medical College of Virginia, Richmond, on July 1 will become dean of the school of medicine to succeed Dr. Jacques P. Gray, who resigned last fall. Dr. Haag has long been associated with the college, having taken his Ph.G. degree there in 1923 and his M.D. in 1928. With the exception of a year at Cornell University Medical College, where he was assistant in pharmacology, he has been on the teaching staff of the Medical College of Virginia since 1923 and professor since 1933.

WEST VIRGINIA

Emergency Paternal and Infant Care Program Ends.—This program, in operation over the country for the past four years, will be discontinued July 1. It was created by an act of Congress for the duration of the war and six months thereafter. According to Dr. Newman H. Dyer, Charleston, state health commissioner, pregnancies occurring before June 30 will be eligible for care provided the husband is actively engaged in the armed forces in the four lower pay grades, and the child will be entitled to pediatric care for one year after birth. If the mother does not apply for this service in the first months of pregnancy, if she can prove that the pregnancy occurred prior to June 30, care for herself and her child for one year will be authorized after this date. From the inauguration of the program through Dec. 1, 1946, authorizations for care of 14,874 mothers in West Virginia were completed at a total cost of $1,159,025.02, the attendants at birth receiving $638,449.65 and the hospitals $520,575.37. For the same period care was furnished for 2,198 infants throughout the first year of life at a cost of $110,973.91, the physicians receiving $38,016.01 and the hospitals $72,957.90. During the four years the state department of health has been operating, deliveries in hospitals have increased 69 per cent and infant deaths in West Virginia have decreased from 52.4 per thousand live births in 1943 to 40.5 in 1946, the lowest ever recorded in West Virginia.

ALASKA

Appointments to the Department of Health.—The territorial department of health has increased its staff by several members. Dr. Joseph H. Marshall, a graduate of the Medical College of the State of South Carolina, Charleston, will serve as tuberculosis consultant. He has been a county health officer in Tennessee and served overseas as a major in the Army Medical Corps. A second tuberculosis consultant assigned to Juneau by the United States Public Health Service is Dr. Donald J. McMinimy, Washington, D. C. Dr. Phillip H. Moore, Greeley, Colo., is now orthopedic surgeon at Mount Edgecombe hospital. He is a graduate of the University of Oregon Medical School.

Nutritional Survey.—A three months nutrition study by the territorial department of health will be conducted this summer by Dr. Carroll F. Shukers and John R. Totter, Ph.D., associate professors of physiologic chemistry at the University of Arkansas School of Medicine, Little Rock, to appraise the nutritional status of representative sections of the population of Alaska. It will note clinical signs of malnutrition and evidence of deficiency diseases and will investigate the diets, food supply and food cost. A special effort will be made to determine the cause of corneal opacities. Biochemical determination of various nutrients in the blood and urine will be made in those areas in which eye conditions have been observed. In making this investigation Alaska Native Service personnel will work with the health department. The study has been made possible by grants from the U. S. Public Health Service, the Nutrition Foundation of New York and the U. S. Children's Bureau.

PUERTO RICO

Annual Health Report.—Puerto Rico's population continued to increase as vital statistics for the year 1945, just released, indicated a record high birth rate—42.3 per thousand inhabitants—and a new low death rate—14.1 per thousand. The population of the island in 1946 was estimated at 2,100,000 inhabitants. A decline occurred in all leading causes of death in 1945, except for diarrhea and enteritis, which showed a slight increase. A decrease of more than 20 per cent was recorded in communicable diseases. Malaria, which last year led the list of communicable diseases, dropped to third place in 1945. Highlight of the local public health program was a campaign for the immunization of children against smallpox, whooping cough and diphtheria. During 1945, the report indicates, 24,811 children were inoculated against these diseases, compared with 16,909 the previous year. The incidence of malaria is steadily decreasing. In 1945, the report adds, there were 6,168 cases reported as against 11,209 in 1944. The death rate per 100,000 inhabitants for malaria was 41.6 in 1945 against 49.9 in 1944. The morbidity rate for 1945 was 301.5 per 100,000 inhabitants, against 557.1 in 1944. House to house search and treatment of malaria was continued by 60 public health aides who made 53,445 field visits during the year and 25,202 blood smears, of which 12.1 per cent were positive. Important in the malaria control program during 1945 was the construction of permanent drainage at Santa Isabel and Ponce, the latter project operated cooperatively with the U. S. Public Health Service. At the beginning of the fiscal year 1945-46, the Federal and Insular Malaria Control Bureaus instituted a test of the value of DDT residual spraying of houses, under the direction of the U. S. Public Health Service. The municipality of Santa Isabel was chosen as the test site because of its high death and case rate and because it is typical of malarious municipalities of the south coast of the island.

GENERAL

History of Medicine Meeting.—The twentieth annual meeting of the American Association of the History of Medicine was held May 25-26 at the Cleveland Medical Library, Cleveland. "One Hundred Years Ago," a symposium, was presented by the Johns Hopkins Institute of the History of Medicine. At the dinner session Dr. John F. Fulton, New Haven, Conn., gave an address on Harvey Cushing.

Aero Medical Awards to Drs. Bauer and McFarland.—The Aero Medical Association has just established two annual can Medical Association during the convention in Atlantic City June 4-6. The Theodore C. Lyster Award for contributions to aviation medicine in general was given to Dr. Louis H. Bauer, Hempstead, N. Y., editor of the *Journal of Aviation Medicine* and one of the founders of the association.. The Raymond F. Longacre Award for contributions to aviation medicine in the fields of neuropsychiatry or psychology went to Ross A. McFarland, Ph.D., Cambridge, Mass.

Articles Lost at Atlantic City.—The office of the American Medical Association during the convention in Atlantic City received a number of personal objects which were found in the hall, all of which except a very few have been returned to their owners. There remain a pair of polaroid sun glasses made by V. R. Tedesco, 17 Hanson Place, Brooklyn 17, New York, and some keys including apparently house and car keys; also a pair of eye glasses, some gloves and other personal objects. If the owners care to communicate with the Headquarters Office of the American Medical Association in Chicago, addressing Mr. A. R. Stack, these will be returned.

American Heart Association Election.—At the annual meeting of the American Heart Association in Atlantic City June 6-7 Dr. Arlie R. Barnes, Rochester, Minn., assumed the presidency and Dr. Tinsley R. Harrison, Dallas, Texas, was made president-elect. Other officers elected included Drs. Carl J. Wiggers, Cleveland, vice president; Harry E. Ungerleider, New York, secretary, and Mr. Samuel Harrell, Indianapolis business man, treasurer. In accordance with the plan of reorganization, which calls for the election of laymen as well as physicians to the governing bodies of the association, Thomas I. Parkinson, president of the Equitable Life Assurance Society of the United States, was named chairman of the board of directors. Continuing in their present posts will be Drs. Harold M. Marvin, New Haven, Conn., executive secretary; David D. Rutstein, New York, medical director, and Charles A. R. Connor, New York, associate medical director.

Three New Research Grants.—The award of three new research grants and renewal of a fourth have been announced by Sharp and Dohme, Inc., Philadelphia. A grant to Dr. Oswald P. J. Falk, consultant at the St. Louis City Hospital, St. Louis, will support a clinical study to evaluate caronamide as an adjunct to penicillin in the treatment of infectious diseases. Dr. Charles N. Hendricks, El Paso Medical and Surgical Clinic, El Paso, Texas, received a grant in support of a clinical study and use of tyrothricin and other preparations as an aerosol. The third research grant went to Dr. Marshall C. Cheney, physician in charge of student health, University of California, Berkeley, Calif., in support of his research into the prevention of the common cold by means of respiratory vaccines. The company also renewed a grant to Tulane University of Louisiana, New Orleans, in support of C. Gordon Johnson's research program in connection with problems involving phthalylsulfathiazole and sulfamerazine in preoperative and postoperative urinary tract infections.

Education of School Children on Role of Animal Experimentation.—Through the active cooperation of the National Teachers Association, the National Society for Medical Research will initiate a plan for education in elementary and secondary schools on the role of animal experimentation in medical research. The National Science Teachers Association, a department of the National Education Association, has as its objective the improvement of science teaching at all educational levels. The association regularly sends out informational packets to 5,000 science teachers in various parts of the country and to the membership of 30 science teachers associations affiliated with the National Science Teachers Association. First step in the society's plan for work with science teachers will be the establishment of a joint committee to develop materials useful in teaching. Mr. Tom J. Blakley, assistant secretary of the National Society for Medical Research, is at present working on final drafts of educational leaflets and announces that the joint committee will be set up in the immediate future.

Conference on Conservation, Nutrition and Human Health.—This conference will be held June 28-29 at Ohio University, Athens, Ohio, by Friends of the Land in cooperation with the University. Discussions will present the relationships that exist between the quality of the soil and the health of the people who live on it. Among the speakers Saturday will be Dr. Axel Emanuel Hedback, Minneapolis, who will discuss "The Aging of Man"; Dr. Paul R. Cannon, Chicago, "Building Stones of Health"; Milburn L. Wilson, Ph.D., "Giving the People of the United States an Optimal Food Supply," and J. Russell Smith, Ph.D, "Plan or Perish." On Sunday Curt P. Richter, Ph.D., will speak on "Instinctive Dietary Habits"; Ladd Haystead, "The Future of Farm Life in America"; Warren S. Thompson, Ph. D., "Population Problems of the United States"; Robert Cook, editor of the *Journal of Heredity*, "Conservation of Soil and Genes"; C. M. Long, "Taking the Farm to the Clinic—Diagnosis and Treatment," and Dr. Jonathan Forman, Columbus, "Current Thinking on Nutrition."

American Urological Association.—This association will hold its annual meeting June 30-July 3 at the Hotel Statler, Buffalo. In addition to numerous members of the association and invited guests, the following will address the scientific sessions: Dr. Terence Millin, London, England, on "Retropubic Prostatectomy"; Dr. Armando Trabucco, Buenos Aires, "Congenital Sterility"; Ju Chen Hsiung, Shanghai, China, "Influence of Mineral Oil on the Absorption of Diethylstilbestrol from the Gastrointestinal Tract." Dr. Jack Lapides, Ann Arbor, Mich., will deliver the winning prize essay of the Committee on Research on "The Physiology of the Intact Human Ureter." The association will present its second annual award for research on the human male reproductive tract to Dr. Robert S. Hotchkiss, New York, who will address the session on "Reflections on Infertility in Men." The presidential address by Dr. Charles McMartin, Omaha, will be delivered July 3 on "Teaching Urology to the Undergraduate." It will be followed by the Ramon Guiteras Lecture by Dr. George W. Thorn, Hersey professor of the theory and practice of physic, Harvard Medical School, on "Treatment of Renal Insufficiency."

Dr. Clarence E. Moore of Pennsylvania Wins Golf Championship.—At the annual American Medical Golfing Association tournament, Atlantic City, June 9, Dr. Clarence E. Moore, Harrisburg, Pa., won the Will Walter Trophy and the championship of the American Medical Golfing Association with a score of 148 for 36 holes over the Linwood Country Club course. The handicap championship for 36 holes and the Detroit Trophy went to Dr. George N. Hemmer, Syracuse, N. Y. In the 18 hole contest Dr. Regis A. Wolff, Pittsburgh, won the Golden State Trophy for the best gross score, and Dr. Eugene E. O'Neal, Boston, bagged the Ben Thomas Trophy with the best net; Dr. William H. Glass, East Orange, N. J., took home the Atlantic City Trophy as the runner-up. The day's second best gross score for 36 holes was made by Dr. Delon A. Williams, Kansas City, who has his name engraved on the St. Louis Trophy, emblematic of championship in flight A. Dr. Thomas A. Kyner, Kansas City, won the President's Trophy, presented by Dr. James W. Morgan of San Francisco, for the handicap championship in flight A. In the event limited to Fellows 60 years of age or older, the Minneapolis Trophy went to Dr. William C. Speidel of Seattle. Dr. Erastus S. Edgerton, Wichita, Kan., won the Wendell Phillips Trophy in the "Old Guard" event, limited to past presidents of the A. M. G. A.

Section Event

Seven sterling silver bowls were presented by the San Francisco Medical Society to the following winners in the section event:

General Practice	Dr. Albert M. Donato, Indianapolis.
Internal Medicine	Dr. Peter F. Harrington, Providence, R. I.
Surgery	Dr. C. G. Prather, Westwood, N. J.
Obstetrics and Gynecology	Dr. David H. Houston, Seattle.
Eye, Ear, Nose and Throat	Dr. Sylvester E. Lentz, Lehighton, Pa.
Proctology	Dr. James W. Morgan, San Francisco.
Other Specialties	Dr. Sheldon H. Stuurmans, St. Paul.

Special prizes were presented to Dr. José Valls, Buenos Aires, president of the Argentina Medical Association, who came the greatest distance to the tournament, and to Dr. Baxter H. Timberlake, Atlantic City, for a hole in one.

Election

Dr. Waltman Walters of Rochester, Minn., was chosen president of the American Medical Golfing Association for the ensuing year. Dr. William C. Speidel, Seattle, was elected first vice president and Dr. Jean A. Gruhler of Atlantic City second vice president. Bill Burns and J. Lyn Leet of Lansing, Mich., were reelected secretary-treasurer and assistant secretary-treasurer respectively. The next annual tournament will be held in Chicago in June 1948.

Deaths in Foreign Countries

Sir Frederick G. Hopkins, noted for his work on the growth promoting vitamins and a joint winner of the Nobel Prize for medicine in 1929, president of the Royal Society 1930-1935, died May 16, aged 86.

CORRECTION

Radio Broadcasts at Atlantic City.—In the leading editorial in THE JOURNAL June 21 it was stated (p. 696) that the Mutual Broadcasting System "duplicated" a broadcast in the series "Stephen Graham—Family Doctor" at the Monday night dinner of the House of Delegates. This was not a duplicate performance but the origination of the actual nationwide broadcast in the presence of the guests at the dinner. Reference should have been made to the cooperation of the Columbia Broadcasting System in the broadcast of "The Two Worlds of Dr. Frederick Banks" on June 7 in commemoration of the Centennial and in broadcasting the speech of the President of the Association, Dr. Edward L. Bortz; also of the cooperation of the Mutual network in broadcasting an interview with Dr. Bortz.

Marriages

HUGH EDWARD TYNER, Leaksville, N. C., to Miss Anna Katherine Bell of Morehead City in Winston-Salem March 8.

WILLIAM CLARK THOMAS JR., Gainesville, Fla., to Miss Brenda A. Wiltshire of Buenos Aires, Argentina, recently.

STONEWALL JACKSON VAN HOOK, Whitehaven, Tenn., to Miss Gladys Mae Scarbrough of Maryville March 1.

WILLIAM HARPER WEISS, Fairmont, W. Va., to Miss Rosemarie Lauer of Decatur, Ill., in St. Louis March 4.

JEROME VICTOR TREUSCH to Miss Constance Gloria Ripley, both of Beverly Hills, Calif., Dec. 8, 1946.

HARRY S. DOUGLAS, Washington, D. C., to Miss Bernadine Curley, of Billings, Mont., Dec. 14, 1946.

EDWARD S. CROSLAND, Reno, Nev., to Miss Esther Buckwalter of Leola, Pa., in San Francisco recently.

HARRIE ROGERS CHAMBERLIN, Belmont, Mass., to Miss Betsy Inches of Chestnut Hill, Dec. 17, 1946.

MILLARD B. WHITE, Tampa, Fla., to Miss Mary Elizabeth Snow of Savannah, Ga., Dec. 26, 1946.

LESTER JAMES TALBOT, Bala-Cynwyd, Pa., to Miss Dorothy Harrison of St. Davids February 15.

ALFRED N. SMITH, Calmar, Iowa, to Miss Mary Louise Wyman of Yampa, Colo., recently.

ADRON A. SULLENGER, Marion, Ind., to Miss Cuma Cottingham of Indianapolis March 8.

LOUIS SPIGELMAN, Jamaica, N. Y., to Miss Doris Altman of Corona recently.

Deaths

Ulysses Silver Kann ● New York; Université de Paris Faculté de Médecine, France, 1901; an Affiliate Fellow of the American Medical Association; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society, Radiological Society of North America and the American College of Radiology; fellow of the New York Academy of Medicine and American College of Physicians; past president of the Broome County Medical Society and the Binghamton Academy of Medicine; served with the National Guard on the Mexican border in 1916 and in France during World War I; for many years on the staffs of the Ideal Hospital in Endicott, Tioga County General Hospital in Waverly, Broome County Tuberculosis Hospital in Chenango Bridge, Binghamton City Hospital and the Binghamton State Hospital; died in the Lenox Hill Hospital April 7, aged 74, of coronary thrombosis.

Thomas Hendrick Russell ● New York; Jefferson Medical College of Philadelphia, 1908; member of the founders group of the American Board of Surgery; assistant director and professor of clinical surgery at the New York Post-Graduate Medical School; fellow of the American College of Surgeons; member of the New York Surgical Society; consulting surgeon at the Gouverneur Hospital in New York, St. Joseph's Hospital in Far Rockaway, Nyack (N. Y.) Hospital, Rockaway Beach Hospital in Rockaway Beach, St. Agnes Hospital in White Plains and the Jersey City Medical Center in Jersey City; director of the surgical service at New York Post-Graduate Hospital and Dispensary; died April 5, aged 61, of coronary thrombosis.

James Richey Horner, Cleveland; Homeopathic Hospital College, Cleveland, 1883; New York Homeopathic Medical College, New York, 1884; Western Reserve University Medical Department, Cleveland, 1907; formerly professor of nervous and mental diseases at the Cleveland Homeopathic Medical College; served on the staff of the Cleveland City Hospital, as president of the staff of the Cleveland Homeopathic Hospital and as secretary of the American Institute of Homeopathy; until 1942 secretary of the staff of the Huron Road Hospital in East Cleveland, where he died March 20, aged 86, of carcinoma of the sigmoid and uremia.

Richard Burgess Webb ● Paintsville, Ky.; University of Louisville School of Medicine, 1932; interned at the Hillman Hospital in Birmingham, Ala., Highsmith Hospital in Fayetteville, N. C., and the Aultman Hospital in Canton, Ohio; served a residency at the Colorado Springs (Colo.) Psychopathic Hospital; began active duty as a lieutenant in the medical corps, Army of the United States, in May 1942; served nine months overseas in the Asiatic and the Pacific theaters; separated from the service with the rank of captain on April 22, 1946; died June 30, 1946, aged 40, of coronary thrombosis.

Joseph Stokes ● Moorestown, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1883; past president of the Burlington County Medical Society; since 1933 chairman of the board of trustees and past president of the Burlington County Trust Company; served as president of the Moorestown National Bank; for many years affiliated with the Friends School; served on the board of the Friends Hospital in Philadelphia; on the visiting staff of the Burlington County Hospital in Mount Holly; died April 7, aged 85, of hemiplegia and hypertensive cardiovascular disease.

Lisbon C. Allen, Hoschton, Ga.; University of Georgia Medical Department, Augusta, 1888; member of the American Medical Association; formerly member of the state legislature; for many years member of the board of trustees of the local schools; served as bank president; died in the Piedmont Hospital, Atlanta, March 6, aged 84, of adenocarcinoma of the colon.

James Archie Barker, Ames, Iowa; State University of Iowa College of Medicine, Iowa City, 1900; served during World War I; at one time governor of Battle Mountain Sanatorium in Hot Springs, S. D.; served on the staffs of the Veterans Administration facilities in Lincoln, Neb., in Bath, N. Y. and others; died in Biloxi, Miss., March 9, aged 71, of carcinoma of the stomach.

George Crawford Beekman, Middletown, N. J.; New York University College of Medicine, New York, 1940; interned at the Lenox Hill Hospital in New York, where he served a residency; diplomate of the National Board of Medical Examiners; served during World War II; died in the Riverview Hospital in Red Bank, March 23, aged 32, of a fracture of the skull and crushed chest received when a tractor he had been driving toppled down an embankment.

David Eliot Bixby ● Cleveland; Eclectic Medical College, Cincinnati, 1921; member of the American Psychiatric Association; for many years affiliated with the Cleveland State Hospital; died in the Cleveland Clinic Foundation Hospital April 4, aged 63, of complications following a gallbladder operation.

John McCue Bowcock, Williamson, W. Va.; University of Virginia Department of Medicine, Charlottesville, 1901; on the staff of the Williamson Memorial Hospital; died March 20, aged 72, of coronary thrombosis.

Irene Ballou Bullard, Charlottesville, Va.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; died March 21, aged 70, of cerebral hemorrhage.

Marshall Dickson Carnell, Okmulgee, Okla.; University of Nashville (Tenn.) Medical Department, 1908; member of the American Medical Association; formerly superintendent of health of Okmulgee County and health officer of Sequoyah County; died in the Mayo Clinic, Rochester, Minn., February 22, aged 69, of heart disease.

Harry Everette Carver, Earlham, Iowa; State University of Iowa College of Homeopathic Medicine, 1899; member of the American Medical Association; past president of the Madison County Medical Society; served during World War I; died in the Veterans Hospital in Des Moines, March 18, aged 72, of coronary thrombosis.

Timothy Joseph Casey ● Oakland, Calif.; John A. Creighton Medical College, Omaha, 1916; served during World War I; consultant to the Veterans Administration; died February 10, aged 57, of heart disease.

Claud North Chrisman, Dayton, Ohio; Miami Medical College, Cincinnati, 1895; member of the American Medical Association; past president of the Montgomery County Medical Society; for many years on the staff of St. Elizabeth Hospital, where he died March 23, aged 77, of acute myocarditis and influenza.

Roy Cross, Kansas City, Mo.; University Medical College of Kansas City, Mo., 1908; at one time teacher of chemistry at his alma mater; died in St. Luke's Hospital March 22, aged 63, of cerebral hemorrhage.

Alfred Green Doust, Syracuse, N. Y.; Syracuse University College of Medicine, 1887; served on the staff of the Crouse-Irving Hospital; died in the Syracuse Memorial Hospital March 15, aged 82, of arteriosclerosis and pneumonia.

Robert Lamar Drury, St. Louis; Washington University School of Medicine, St. Louis, 1934; member of the American Medical Association; served during World War II; served on the staffs of the Missouri Baptist Hospital, St. Luke's Hospital and the Frisco Employes' Hospital, where he died March 20, aged 37, of endothelioma with metastasis.

Lester Julian Efird ● Tampa, Fla.; University of Maryland School of Medicine, Baltimore, 1903; served overseas during World War I; died in Winston-Salem, N. C., March 21, aged 68, of hypertensive cardiovascular disease.

John Ebenezer Evans ● Wilmington, N. C.; University of Maryland School of Medicine, Baltimore, 1916; served during World War I; on the staff of the James Walker Memorial Hospital; died March 22, aged 56, of coronary thrombosis.

Rose Cecilia Faughnan ● Passaic, N. J.; Woman's Medical College of Baltimore, 1910; formerly affiliated with the U. S. Public Health Service; served as physician for the board of education of Newark, where she had been on the staff of St. James Hospital; died March 26, aged 73, of bronchopneumonia and adenocarcinoma of the bladder.

Walter Wallace Fenton, San Bernardino, Calif.; Vanderbilt University School of Medicine, Nashville, 1914; school physician; formerly affiliated with the U. S. Public Health Service reserve; county health officer for many years; served during World War I; died in Loma Linda Sanitarium and Hospital in Loma Linda March 21, aged 68, of coronary heart disease.

John Harvey Fouts, Franklin, N. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1895; died March 8, aged 82, of coronary thrombosis.

Patterson Tilford Fraser Jr., Hopkinsville, Ky.; Meharry Medical College, Nashville, Tenn., 1913; served during World War I; died March 30, aged 57, of influenza and pneumonia.

Edward Frothingham ● Woodhaven, New York; New York Homeopathic Medical College and Hospital, New York, 1918; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served during World War I; on the staff of the Brooklyn Eye and Ear Hospital, died in the Methodist Hospital in Brooklyn, March 22, aged 54, of cerebral hemorrhage.

Arthur Louis Gagnon, San Diego, Calif.; Rush Medical College, Chicago, 1900; member of the American Medical Association; served on the staffs of the Norwalk (Calif.) State Hospital and as attending physician at the Nazareth Orphanage in Mission Valley; formerly on the staff of the Mercy Hospital; at one time medical examiner for the county welfare department; died March 26, aged 73, of coronary thrombosis.

Julius Golembe, New York; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1924; member of the American Medical Association; served during World War I; on the staff of the Mount Sinai Hospital; died March 19, aged 50, of coronary thrombosis.

John Hurter Gordon ● Birmingham, Mich.; Tufts College Medical School, Boston, 1919; fellow of the American College of Surgeons; served as chief of staff of St. Joseph Mercy Hospital in Pontiac; served during World War I; died on a train between Palm Beach and Winterhaven, Fla., March 2, aged 56, of coronary thrombosis.

Charles Orson Gose ● Hennessey, Okla.; Keokuk (Iowa) Medical College, 1894; served as director of the Farmers and Merchants National Bank; died in the Oklahoma City General Hospital, Oklahoma City, March 8, aged 79, of cancer.

Joseph John Gramling ● Indianapolis; Indiana University School of Medicine, Indianapolis, 1908; died March 18, aged 68, of coronary occlusion.

Willis Curtis Groce, Byrdstown, Tenn.; University of Nashville Medical Department, 1905; died March 31, aged 68, of heart disease.

James Morgan Grove, Cherokee, Iowa; Harvey Medical College, Chicago, 1903; member of the American Medical Association; on the staff of the Cherokee State Hospital, where he died March 28, aged 76, of arteriosclerotic heart disease.

Solomon Augustus Hatfield ● Columbus, Ohio; Starling-Ohio Medical College, Columbus, 1912; clinical professor of medicine at his alma mater; member of the city board of health and the Columbus Academy of Medicine; formerly superintendent of the Starling-Loring Hospital; on the staffs of the University, St. Francis, Grant and St. Anthony's hospitals; died March 23, aged 58, of coronary occlusion.

Jacob Davis Hershey ● Manheim, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; past president of the Lancaster County Medical Society; formerly burgess of Manheim; served as deputy coroner; county coroner from 1927 to 1935; died in the Lancaster (Pa.) General Hospital March 5, aged 71, of uremia.

Harold Crawford Hill ● Holyoke, Colo.; Rush Medical College, Chicago, 1914; fellow of the American College of Surgeons; superintendent and medical director of the Holyoke Hospital, where he died March 12, aged 57, of coronary occlusion.

Lyndon M. Hill, Atlanta, Ga.; Meharry Medical College, Nashville, Tenn., 1911; served as president of the National Medical Association; died in the Harlem Hospital in New York March 17, aged 66, of carcinoma of the vertebrae.

Wilson Warren Holmes, Keokuk, Iowa; Keokuk Medical College, 1892; member of the American Medical Association; on the staffs of the St. Joseph Hospital and the Graham Hospital, where he died March 20, aged 78, of cerebral hemorrhage.

William Amos Holt, San Diego, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1892; died in National City March 29, aged 85, of mesenteric thrombosis, arteriosclerosis and cerebral hemorrhage.

Frank Albert Hubbard, Columbus Junction, Iowa; Keokuk Medical College, 1895; member of the American Medical Association; served in France during World War I; died March 21, aged 79, of cerebral hemorrhage.

Thomas Franklin Hudson ● Luxora, Ark.; Memphis (Tenn.) Hospital Medical College, 1907; secretary of the Mississippi County Medical Society; killed March 20, aged 64, when the automobile in which he was driving was struck by a train.

King Lyman Hull, Bloomfield, Ind.; Indiana University School of Medicine, Indianapolis, 1929; member of the American Medical Association; past president of the Greene County Medical Society; county coroner; on the staff of the Freeman Greene County Hospital in Linton, where he died March 16, aged 49, of coronary thrombosis.

Henry L. Kirkpatrick, White Sulphur Springs, W. Va.; Medical College of Ohio, Cincinnati, 1881; member of the American Medical Association; served as a member of the Fayette County Court; died March 15, aged 92, of congestive heart failure.

Edwin Jay Koontz, Wadsworth, Ohio; Cleveland University of Medicine and Surgery, 1896; member of the American Medical Association; on the staff of the Wadsworth Municipal Hospital; died March 1, aged 76, of cardiovascular renal disease.

Lyman Converse Lewis ● Belmont, N. Y.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1905; served as president and secretary of Allegany County Medical Society; since 1915 health officer of the consolidated health district of Amity-Belmont; served during World War I; on the staff of the Jones Memorial Hospital in Wellsville, where he died March 21, aged 70, of coronary thrombosis.

William Lomax, Evansville, Ind.; Medical College of Indiana, Indianapolis, 1881; died in Indianapolis March 12, aged 92, of coronary occlusion and chronic nephritis.

Frank E. McCurtain, Denver; Denver College of Physicians and Surgeons, 1897; died in March, aged 76, of lung abscess and lobar pneumonia.

John Bertral McKenzie, Wilmington, Ohio; Starling Medical College, Columbus, 1900; died in Lake Worth, Fla., March 8, aged 73, of coronary thrombosis.

Cleveland Charles MacLane ● Chicago; Loyola University School of Medicine, Chicago, 1917; on the staffs of the Illinois Masonic and St. Bernard's hospitals; served during World War I; died in Tucson, Ariz., March 16, aged 63, of emphysema.

George Elsear Maley, Galesburg, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; died March 20, aged 66, of heart disease.

William J. Maurits, Morrison, Ill.; Detroit College of Medicine, 1900; member of the American Medical Association; died in St. Luke's Hospital, Chicago, March 24, aged 71, of bronchogenic carcinoma.

Frank Richard Morrow ● Miami, Fla.; Ohio State University College of Medicine, Columbus, 1927; specialist certified by the American Board of Internal Medicine; for many years on the staff of the Jackson Memorial Hospital; died March 5, aged 45, of pulmonary edema.

Harry G. Nicks ● St. Louis; Ensworth Medical College, St. Joseph, Mo., 1890; formerly professor of physical diagnosis and practice of medicine at the St. Louis College of Physicians and Surgeons; died March 24, aged 85, of monocytic leukemia.

William T. O'Halloran ● Boston; Tufts College Medical School, Boston, 1924; assistant professor of medicine at the Boston University School of Medicine; fellow of the American College of Physicians; physician in chief of the sixth medical service at the Boston City Hospital; died March 21, aged 48, of hypertensive heart disease.

John Henry Outland ● Kansas City, Mo.; University of Pennsylvania Department of Medicine, Philadelphia, 1900; died in Laguna Beach, Calif., March 24, aged 76, of cerebral thrombosis.

William Thomas Owens, Hartford, Conn.; University of Vermont College of Medicine, Burlington, 1899; served as officer in the state national guard, on the Mexican Border and during World War I; on the staffs of the Hartford and St. Francis hospitals; died March 13, aged 71, of pulmonary tuberculosis.

Herman B. Parker, Guayaquil, Ecuador; University of Pennsylvania Department of Medicine, Philadelphia, 1896; formerly affiliated with the U. S. Public Health Service; died in Miami, Fla., March 16, aged 72, of embolus of the right colic artery.

Charles Orley Peters, Erie, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1912; member of the American Medical Association; served during World War I; on the staff of St. Vincent's Hospital; died February 1, aged 60, of bronchopneumonia and Parkinson's disease.

Albert Pfeiffer, Fremont, Ohio; Louisville (Ky.) Medical College, 1893; formerly coroner of Allen County; served during World War I; served on the staff of the Lima State Hospital; died March 21, aged 89, of arteriosclerotic gangrene.

Charles Jacob Pflug, Brooklyn; University of the City of New York Medical Department, New York, 1895; member of the American Medical Association; fellow of the American College of Surgeons; surgeon, South Side Hospital in Bay Shore; consulting surgeon, St. Catherine's and Wade hospitals; attending surgeon, Wyckoff Heights Hospital, where he died March 22, aged 73, of acute coronary occlusion, diabetes mellitus, arteriosclerosis and gangrene of left big toe.

Barnie Lee Piper, Georgiana, Ala.; Emory University School of Medicine, Atlanta, 1916; member of the American Medical Association; died in Roanoke March 17, aged 59, of nephritis.

Lafayette Oren Roberts, Portland, Ore.; University of Oregon Medical School, Portland, 1912; member of the American Medical Association; served during World War I; died March 19, aged 66, of coronary sclerosis.

Charles Bradford Rodes ● Butte, Mont.; St. Louis University School of Medicine, 1908; specialist certified by the American Board of Radiology; member of the American College of Radiology; served as medical director of the Murray Hospital; died March 31, aged 67.

Morris Martin Rottman ● Chicago; Chicago Medical School, 1929; served during World wars I and II; on the staffs of the Grant and Cuneo hospitals; died March 15, aged 47, of coronary thrombosis.

Rubin Ryvkin, Berlin, N. Y.; Universita Karlova Fakulta Lékařská, Prague, Czechoslovakia, 1928; died February 5, aged 48, of coronary occlusion.

Henry T. Schildroth, Washington, D. C.; Georgetown University School of Medicine, Washington, D. C., 1893; formerly coroner of St. Clair County, Ill.; on the staffs of the Georgetown University Hospital and the Providence Hospital, where he died March 29, aged 80, of arteriosclerosis.

Walter Shropshire, Yoakum, Texas; Missouri Medical College, St. Louis, 1890; past president of the Lavaca County Medical Society; formerly vice president of the State Medical Association of Texas and councilor of the Eighth District; served as city health officer; died April 3, aged 84, of hypostatic pneumonia and myocarditis.

George Sinnamon, Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1889; member of the American Medical Association; for many years police surgeon; on the staffs of the Stetson Hospital and the Episcopal Hospital, where he died March 10, aged 78, of cerebral hemorrhage.

Irving William Slack, Tampa, Fla.; University of Vermont College of Medicine, Burlington, 1911; died February 28, aged 80, of coronary thrombosis.

Guy Beckley Stearns, New York; New York Homeopathic Medical College and Hospital, New York, 1900; formerly professor of materia medica at his alma mater; died March 25, aged 76, of carcinoma.

John Anthony Steinwandel, Philadelphia; Jefferson Medical College of Philadelphia, 1890; on the staff of the Jefferson Hospital; died March 30, aged 86, of heart disease.

Ralph Methven Thomson, Savannah, Ga.; Medical Department of Tulane University of Louisiana, New Orleans, 1898; died March 24, aged 71, of pneumonia.

LIEUT. WILLIAM S. ALLEE
M. C., A. U. S., 1912-1944

COL. CHARLES M. DOWNS
M. C., U. S. ARMY, 1900-1945

CAPT. JOEL Y. MARSHALL
M. C., A. U. S., 1912-1945

Max Schoenbaum ● Richmond, Va.; Medical College of Virginia, Richmond, 1905; on the staff of St. Elizabeth Hospital; died March 27, aged 64, of coronary thrombosis.

Harry Fenton Settle, Kansas City, Mo.; Kansas City College of Medicine and Surgery, 1919; died March 22, aged 64, of coronary disease.

William Grant Williams, Bayard, Neb.; University Medical College of Kansas City, Mo., 1907; died March 20, aged 82, of endocarditis and hypertension.

Abraham Zelnigher ● Brooklyn; Long Island College Hospital, Brooklyn, 1923; on the staff of the Israel Zion Hospital; died March 14, aged 47, of coronary occlusion.

KILLED IN ACTION

William Sylvanus Allee, Wadsworth, Kan.; Washington University School of Medicine, St. Louis, 1938; interned at St. Luke's Hospital and served a residency at Frisco Employes' Hospital, both in St. Louis; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army on May 14, 1941; prisoner of war of the Japanese; died in the South China Sea Oct. 24, 1944, aged 32, when the ship on which he was being transported was sunk.

Charles McCabe Downs ● Colonel, M. C., U. S. Army, Bloomington, Ind.; born in Casey, Ill., on March 9, 1900; Indiana University School of Medicine, Indianapolis, 1927; Army Medical School and Medical Field Service School in 1930; entered the medical corps of the U. S. Army as a first lieutenant in 1928; promoted through the various grades to that of colonel; in service for eighteen years and in Pacific war zones for three years; in 1945 awarded the Bronze Star for meritorious achievement in connection with military operations on Leyte with the 10th Army Corps, of which he was surgeon; at one time surgeon for the Second Cavalry Division and for the Ninth Armored Division; received the posthumous award of the Army Commendation Medal; killed in action over Mindanao, P. I., June 1, 1945, aged 45.

Joel York Marshall, Alfred Maine; University of Western Ontario Medical School, London, Ont., Canada, 1941; interned at St. Luke's Hospital in Cleveland, where he served a residency; captain, medical corps, Army of the United States; served with an Engineer Medical Corps unit; killed in action in Germany March 15, 1945, aged 33.

Foreign Letters

OSLO

(From Our Regular Correspondent)

May 9, 1947.

Memories of the German Occupation

Bit by bit we are piecing together the experiences of our fellow beings during the German occupation of Norway, and now we have learned how Dr. G. H. Monrad-Krohn, professor of medicine (neurology), played his part. An involuntary testimonial to his patriotism was given him by a former assistant, Dr. Ostrem, one of Quisling's henchmen, who wrote a letter denouncing the professor to the quisling camp. A few days after it was written the professor received a photostatic copy of it provided by the intelligence service of the underground movement. On Jan. 1, 1941 the professor was elected dean of the University of Oslo by the Faculty of Medicine. When the rector of the university and some other professors were arrested and held as hostages, the deans of the various faculties were the only remnant of the original university staff. Clandestine meetings of the deans were held in the professor's office, where plans for the circumvention of nazi rule were devised. In the autumn of 1943 the Germans closed the university and sent several hundred students to prison in Germany. There was now a great danger of a reopened university run by and for quislings. To avoid this, and on the initiative of Professor Monrad-Krohn, the university buildings were turned into hospitals and school rooms for children.

Marriage and Mental Disease

On the paradoxical principle that the busier you are the more time you find for supplementary activities, Dr. Oernulv Oedegaard, medical superintendent of the Gaustad State Asylum near Oslo, continues to make valuable contributions to the psychiatric education of the public and to research. His recent article on the relative importance of heredity and environment with regard to mental disease, published in a Norwegian journal read by laymen, is a stimulating corrective to the fatalism of the hitlerite school of heredity. His recent research into the relationship of marriage to mental disease is based on a study of 14,231 first admissions to Norwegian mental hospitals. He found that the incidence of mental disease was much higher among the single than among the married. He discusses three possible explanations: (1) that a single person who develops mental disease is more readily admitted to a mental hospital, (2) that the subjects of mental disease present certain personality traits which, before its outbreak, act as marriage handicaps and (3) that there are in married life certain factors preventing the outbreak of mental disease. He can find little evidence in support of this last explanation, whereas the second explanation is supported by much valid evidence.

Who Is Best Off, Doctor or Bank Clerk?

The scandal of the inadequate remuneration of doctors holding junior hospital appointments has led to an investigation of the standards of living of members of the community other than doctors in order to draw an instructive comparison. While in Sweden the wage earner selected for this comparison was a typical bus conductor, in Norway the bank clerk has served as a control. He begins to earn when he is 19, whereas a doctor does not do so till he is 27. In the *Journal of the Norwegian Medical Association* for April 1, 1947 an actuary, Herr Gunnar Trier, has calculated how much a doctor ought to earn if his standard of living is to equal that of the bank clerk, after due consideration has been paid to the lean years after the age of 19. He finds that the doctor's annual earning must be at least 13,000 kroner, or $2,600. What we would, of course, also like to know, but are not told, is the actual average earning of our colleagues. What we do know is that as from March 1, 1947 the remuneration attaching to junior hospital appointments is to be scaled upward. But even so these terms are considered far from satisfactory by the medical profession and will assuredly have to be revised in the near future.

CHILE

(From Our Regular Correspondent)

March 15, 1947.

Construction of Hospitals

A law was enacted in July 1945 for the creation of a society to construct hospitals in various regions of the country. This law creates a mechanism in which the Public Beneficence, the national treasury and the people participate in the creation of hospitals for the poor. The funds are integrated by (1) money obtained by the government through certain special laws and the general budget of the country, (2) money and property of the Public Beneficence and (3) and (4) money of either private institutions or private parties as given in the nature of investment. The shares are nontaxable. This society has a capital of 300,000,000 Chilean pesos (100,000,000 of the national treasury, 50,000,000 of the Public Beneficence and 150,000,000 of private parties). The amount is progressively increasing. It is in charge of a board of seven directors appointed respectively by the three different constituent parties. The main members of the board of directors now are Drs. Sótero del Río, president, and Benjamin Cid Quiróz, both professors of the University of Chile. As soon as construction of a hospital of the society is finished, the national treasury should rent it with an annual interest of 9 per cent over the cost of construction, to be given to the Public Beneficence for use. The national treasury will give the interest on its shares to the hospitals after completion of their construction. Private holders will have dividends of 8 per cent a year. The hospitals in table 1 are now under construction.

The hospitals in table *2* will be constructed later on in the year.

During 1947 the expenses in hospitals will be about 220,000,000 Chilean pesos, with a total of 2,500 beds. The hospitals will be entirely modern and completely equipped.

TABLE 1.—*Hospitals Now Under Construction*

Hospital	Number of Beds	Value of Complete Construction
San Juan de Dios (Santiago)	627	$19,362,961.00
Vina del Mar	332	13,152,098.32
Los Angeles	240	15,365,146.00
Arica	150	15,543,452.00
Quillota	194	14,308,102.00
San Vicente (Santiago)	700	40,000,000.00
	2,243	$117,731,739.32

TABLE 2.—*Hospitals To Be Constructed Later*

Hospital	Number of Beds	Approximate Amount
San Francisco de Borja (Santiago)	900	$60,000,000
Chañaral	30	3,000,000
Ancud	50	4,000,000
Loncoche	40	3,500,000
	1,020	$70,500,000

Production of Penicillin

A plant for the production of penicillin is regularly working at the Instituto Bacteriologico of Chile at Santiago. This is a semiautochthonous, semiofficial center of scientific research in which vaccines, serums, arsenicals, pentavalents and similar items are prepared for the National Department of Public Health and the hospitals. The production of penicillin is in charge of Chilean technicians. The daily production is 120 million units. Penicillin from the plant is used by the National Department of Public Health and the Hospitals of Beneficence, mainly in the antivenereal campaign.

Cardiologists in Chile

Drs. Pedro Cossio, Antonio Battro and Antonio Taquini, all of the Faculty of Medicine of the University of Buenos Aires and well known Argentine cardiologists, visited the universities and hospitals of Santiago during last October and gave important lectures. Dr. Cossio lectured on cardiac auscultation, on surgical therapy of hypertension and on tachycardia, Dr. Battro on coronary thrombosis and Dr. Taquini on the physiopathologic problem of cardiac dyspnea. They gave clinical bedside lectures to students in the medical departments of the university.

ITALY

(From Our Regular Correspondent)

April 26, 1947.

Academy Centennial

The Academy of Medicine in Turin celebrated its centennial under the chairmanship of Professor Gamna. The old seat, which had witnessed a hundred years of scientific activity, was destroyed by bombardment during the war; consequently the bibliographic patrimony was lost, but the vice president, Professor Luigi Ferrio, reconstructed the history of the academy by patiently investigating the archives and libraries of other institutes in Turin which had not been damaged by the war. This history was published to commemorate the centennial of the academy.

The anniversary was celebrated by a conference with Sir Alexander Fleming, who had been invited for this purpose. He recalled the long research which resulted in the discovery of penicillin and the first clinical applications of the new product. Fleming emphasized that his product should not be considered as a panacea.

Surgical Society

At a meeting of the Surgical Society in Naples under the chairmanship of Professor Cantelmo, Schisano described a case of carcinoma of the uterus in a girl aged 9 who for two years had lost small quantities of blood. Biopsy revealed an epithelioma of the cervix, and total hysterectomy was performed. Postoperative macroscopic and microscopic examination of the specimen proved the diagnosis. For four years after the intervention the patient enjoyed good health.

Radice reported a case of cancer of the vaginal portion of the uterus in a woman aged 19 who was operated on. Death occurred from metastasis within a short time. Niccolo and Greco presented their belief that the anatomicopathologic and the clinical malignancy of a tumor are not always parallel. It may be considered as established that one has to deal with blastomas, which often arise from undifferentiated embryonal elements and which may explain why their microscopic picture is characterized by undifferentiated cells.

Palma discussed the pathogenesis of postanastomotic peptic ulcers based on 23 patients operated on. Interdependence between visceroparietal adhesions and postoperative ulcers may be suggested by the numerous adhesions of the liver, stomach and omentum to the abdominal wall in nearly all cases. In 6 cases the ulcer was localized in the efferent and in 3 cases in the afferent intestinal loop. In 14 cases it was at the new stoma. A silk thread was found in 4 cases at the bottom of the ulcer. Except for the 3 cases of perforation with free peritoneum, death occurred in 3 of the remaining 20 cases, i. e. a mortality of 15 per cent.

The speaker first discussed the factors which other authors consider as contributing to the condition (threads of silk, compressors), but he emphasized that inadequate surgical technic (gastroenterostomy with employment of a longer loop and in a high position) and the visceroparietal adhesions may be responsible in the first order. Various surgeons participated in the discussion of Palma's paper. Bracale stated that some North American authors have demonstrated acute deficiency of one component of the vitamin B complex. The symptoms disappeared and the x-ray examination became negative after these patients were given massive doses of vitamin B.

Intraosseous Anesthesia in Man

Dr. D'Errico tested anesthesia by the intraosseous route with barbituric acid preparations on 19 patients in the surgical clinic of the University of Naples. According to the new technic solution of 2.50 per cent of pentothal sodium is injected into the manubrium of the sternum. It offers several advantages, for instance the possibility of producing anesthesia in persons whose veins are not on the surface, of injecting repeated doses without requiring any apparatus of fixation of the needle and for keeping it passable, and the possibility of easy control during the anesthesia. Untoward reactions, which were related directly to the technic, however, occurred in several cases and consequently D'Errico does not advise its general use for the present.

Deaths

Professor Paolo Fiori, director of the surgical clinic of the university, died in Genoa. Fiori began his university career as an assistant to the Faculty of Medicine of Pavia, dedicating himself to the study of general pathology and endocrinology under the leadership of Professor Giulio Vassale. He then studied clinical surgery and after years of service with other universities was called to succeed his master Professor Giuseppe Tusini in Genoa. Particularly brilliant were his studies on gastric ulcer, experimental hydrosalpinx, gas gangrene and in vitro tissue cultures. His most important surgical contributions dealt with tuberculosis of the cecum, hemolytic splenomegaly and cysts of the spermatic cord. His surgical school is now being continued by such capable pupils as Professors Fedeli and Agrifoglio, the latter of whom has been assigned to university teaching.

Professor Giovanni Boeri, aged 79, formerly director of the medical clinic of the University of Naples, is dead. During the war he suffered the loss of his entire private library of medical papers as the result of bombardment from the air. He was the first physician to reveal in 1914 that amebiasis may in endemic form and without any relation to imported cases from abroad be manifested in the temperate regions of Europe.

Professor Giuseppe Zagari, director, medical clinic, University of Naples, died likewise advanced in years. His studies (1887) on bacterial antagonism were based on the vital competition of micro-organisms and on a new means of prophylaxis against carbuncles; they demonstrated that products of bacterial metabolism may accrue in the culture substance of cholerigenous vibrio; these products of metabolism have an effect on the anthrax bacillus for which then the term "antiseptic" was used by the author, while "antibiotic" is the modern term for this effect. His studies on hydrophobia, carried out in collaboration with Di Vestea, showed that the virus of rabies may reach the nerve centers by the peripheral nerves rather than by the blood vessels.

Zagari contributed to the great Italian treatise of Medical Pathology and Clinical Propedeutics with chapters on rabies, carbuncles, glanders and erysipelas. Only recently he contributed a chapter on septicemia to the Treatise on Internal Medicine by Ceconi.

Correspondence

ALLERGATON—A WARNING

To the Editor:—The Food and Drug Administration desires to warn the medical profession in the Northwest of the presence of a fly-by-night salesman doing business under the trade name of Associated Allergaton Labs., purportedly of 421 Moss Avenue, Oakland, Calif. This salesman, whose name is H. L. Scott, details physicians personally and attempts to sell ampules or vials of a product called "Allergaton," which is represented as a specific for skin irritations such as itching, or in place of liver extract, or for allergic disorders or arthritis.

Samples of this medicine which have been analyzed by the Food and Drug Administration show that it is an alkaline polysulfide solution which causes severe reactions when administered to patients. One patient to whom it was administered by a Seattle physician became violently ill and was confined to bed for two days, as if paralyzed following its administration, and was unable to work for a week after the injection.

There is no such firm as the Associated Allergaton Labs. of Oakland. Mr. H. L. Scott and his associates have been operating recently in the states of Washington and Idaho. They leave no forwarding address or, if they leave one, it is false. They do not operate systematically in any particular area. If any physician is contacted by these promoters we would appreciate his notifying local health authorities or the Seattle office of the Food and Drug Administration in the Federal Building, since the preparation which is being peddled by these promoters is a dangerous one and is capable of causing serious injury when injected, in addition to being useless for the purpose offered.

RALPH W. WEILERSTEIN, M.D., San Francisco.

DETERMINATION OF PROTHROMBIN

To the Editor:—The one stage method for the determination of prothrombin has assumed a steadily increasing importance in the clinical laboratory ever since its introduction in 1935. Unfortunately, much confusion concerning the test still exists, mainly because of unwarranted modifications of the procedure. These, for the most part, have contributed nothing as to increasing its simplicity, accuracy or practicability. It is encouraging to note, however, that many laboratories adhere strictly to my procedure and are reporting exact and consistent results.

The introduction of dicumarol into therapy has made it obligatory, first, that the determination of prothrombin be done correctly, and secondly that the prothrombin of the blood should be reduced to a level which is therapeutically effective. The correct technic for carrying out my method is exceedingly simple. It can be acquired by any qualified technologist in one or two hours, as has been demonstrated repeatedly in my laboratory. One additional hour is required to learn the procedure for preparing thromboplastin from rabbit brain. Technologists thus trained can consistently get a prothrombin time of 11 to 12½ seconds for normal human plasma. This value has now been obtained by me since 1938 and even from thromboplastin made in that year and stored until now. The constancy of this reagent has introduced a degree of accuracy into the study of coagulation which is particularly striking when compared with the notorious inaccuracies that formerly characterized this field.

On the basis of animal experiments as well as by clinical observation it has been found in my laboratory that the critical level of prothrombin at which hemostasis is definitely affected is indicated by a prothrombin time of approximately 19 seconds (equivalent to 30 per cent of normal). This level can be assumed also to be the one at which intravascular clotting is inhibited and therefore the level to which the prothrombin must be reduced for effective therapeutic results. To be sure of the correct level, a reliable thromboplastin must be used, and thus far acetone dehydrated rabbit brain has been the only preparation which has met the requirement for my method.

Particular precaution must be taken if a thromboplastin is prepared from such tissue as lung, which is difficult to free from blood, for such preparations are contaminated with component A, a coagulation factor which I discovered in 1943 (Quick, A. J.: *Am. J. Physiol.* **140**:212 [Nov.] 1943). This has become of practical importance since Owren (Owren, P. A.: *Lancet* **1**:446 [April 5] 1947) has recently reported a hemorrhagic condition in which this factor is presumably diminished. Obviously a thromboplastin contaminated with the very factor lacking in the blood in this condition is entirely unsuited and unsatisfactory. It may be somewhat tedious to fillet a rabbit brain, but it is decidedly worth while, since the product obtained is probably the purest thromboplastin now known and one that has yielded results that have blazed new trails in the assuredly difficult field of blood coagulation.

ARMAND J. QUICK, M.D., Milwaukee.

GENERAL PRACTICE AND RADIOLOGY IN A LARGE HOSPITAL

To the Editor.—Dr. Miller's article on "General Practice in a Large Hospital" in the March 3 issue of THE JOURNAL has been read with considerable interest. He stated that the regular staff of his hospital was organized into four sections: (1) medicine, (2) surgery, (3) obstetrics and gynecology and (4) general practice. Since diagnosis is the cornerstone of modern medical practice, it was rather astonishing to see no mention of departments of radiology or pathology. You are doubtless aware that in the modern nationwide educational program of the Veterans Administration hospitals, the following four departments are stressed: (1) medicine, (2) surgery, (3) pathology and (4) radiology. By giving the two principal diagnostic departments an equal standing with those of medicine and surgery, responsibility is properly assigned and opportunity for advancement in those fundamental specialties increased. This surprising omission was mentioned in a letter to Dr. Miller; he was good enough to inform me that the Mount Carmel Mercy Hospital included a section on pathology and radiology in the department of medicine. It is respectfully suggested that greater progress in sound diagnostic methods would be made if the precedent of the modern Veterans Administration structure were followed, than Dr. Miller's breakdown. General practice may well merit a separate department in addition to the four main ones listed.

L. HENRY GARLAND, M.D., San Francisco.

ACUTE YELLOW ATROPHY OF THE LIVER

To the Editor:—I have read your editorial in the April 12 issue of THE JOURNAL on acute yellow atrophy of the liver. The analysis is an interesting one and it is especially interesting to me that two of the three periods of excessive frequency appeared to have occurred during and after world wars. During these periods an unusually large number of workers were exposed to hepatotoxic substances in industry: The manufacture of trinitrotoluene and the use of chlorinated naphthalenes and diphenyls for insulating cables are examples. While I do not have statistical data as to the extent of this exposure and cannot draw definite conclusions therefore as to its relative importance in the total picture, I believe that it is one of the factors which should be mentioned along with the others in a discussion of this subject. I am bringing this matter to your attention primarily because occupational exposures are so often overlooked in discussions of clinical disease entities.

MAY R. MAYERS, M.D., New York.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Charitable Hospital: Liability for Negligence of Employees in Mistaking Boric Acid for Dextrose.—The plaintiff sued for damages for his daughter's death alleged to have resulted from negligent acts of the servants of the defendant hospital. From a verdict and judgment for the plaintiff, the defendant appealed to the Supreme Court of Errors of Connecticut.

The defendant is a charitable hospital. Its pharmacy, located in the basement of the hospital building, consisted of the pharmacy proper, or workroom, and six rooms containing all sorts of supplies. Boric acid and dextrose, which look alike, were purchased from the same concern, and the containers were of similar cylindric size and shape and were similarly labeled. On the boric acid label, however, were the additional words in small type "for external use only." Both substances were stored on the floor in the pharmacy proper about 4 feet apart. Boric acid is a poison and may be fatal to newborn babies if taken internally. Paula Machnik, a competent pharmacist, was in charge of the pharmacy, and to assist her the housekeeper had assigned Henry Lindner to report to the pharmacy every day between 10 and 12. While in the pharmacy he did what the pharmacist told him to do. He carried packages, washed bottles and filled containers, when directed to do so, with such bulk supplies as talcum powder, green soap, mouthwash, witch hazel, lysol and mineral oil. The various departments of the hospital had so-called supply days (Monday and Thursday for the maternity department) when they sent various containers to the pharmacy in large baskets with order books indicating the material requisitioned. Under hospital routine, in effect at the defendant hospital, newborn infants were given a feeding of 5 per cent dextrose solution. On Thursday, April 6, the dextrose bottle was nearly empty and was sent to the pharmacy to be refilled. It was filled instead with boric acid, the use of which in the feeding formula resulted in the death of 5 babies, 1 of whom was the plaintiff's daughter. The court pointed out that there were two possible bases of liability submitted to the jury: First, was the defendant negligent in the selection of its agents and servants? Second, was it guilty of corporate negligence in failing to provide proper facilities, safeguards and surroundings in the pharmacy? It is the settled law of this state, the Supreme Court emphasized, that a charitable corporation is not liable for the negligence of employees whom it has selected with due care.

The evidence, said the court, as to who filled the bottle with boric acid was a matter of inference from the testimony. The jury reasonably could have concluded that the requisitioned material for the maternity wing on the day in question was supplied by either the pharmacist or Lindner, that in view of her training and experience it was not probable that the pharmacist would have mistaken boric acid powder for dextrose, and that, therefore, in spite of his categorical denial, Lindner did fill it. Negligence on the part of the competent pharmacist would not be a basis of liability, said the court. Assuming that the jury reasonably could have found that Lindner filled the dextrose bottle with boric acid, the same principle would apply, since there was no evidence from which the jury reasonably could have found that the hospital did not use due care in selecting him or in assigning him to do the kind of work for which he was hired under the direction and supervision of the competent pharmacist. The most that the evidence tended to show, the court said, was that the pharmacist improperly directed or permitted Lindner to fill the container. That is far from proving that the corporation or its board of directors failed to use due care in selecting their employees. Furthermore, said the court, the trial court should not have submitted to the jury the question of whether or not the defendant failed to provide proper facilities and safeguards in the pharmacy, since all the evidence introduced was to the effect that the pharmacy was set up in accordance with standard practice. No written rules for its conduct had been prescribed, but there was no evidence that standard practice required this or that their existence would have changed the situation.

Because of errors in instructing the jury, the judgment in favor of the plaintiff was set aside and the case remanded for a new trial.—*Evans v. Lawrence & Memorial Associated Hospitals, Inc., 50 A. (2d) 443 (Conn., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Boards in Specialties were published in THE JOURNAL, June 21, page 736.

BOARDS OF MEDICAL EXAMINERS

ARIZONA: * *Examination.* Phoenix, July 1-2. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

CALIFORNIA: *Written.* San Francisco, July 7-10. *Oral.* San Francisco, July 19-20. Sec., Dr. Frederick N. Scatena, 1020 N. St., Sacramento 14.

CONNECTICUT: *Examination.* Hartford, July 8-9. Secretary to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, July 8. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: *Examination.* Dover, July 8-10. *Endorsement.* Dover, July 13. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

GEORGIA: Atlanta, Oct. 14-16. Sec., Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: *Examination.* Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

IDAHO: Boise, July 14-16. Sec., Bureau of Occupational Licenses, Dr. S. M. Poindexter, Eastman Bldg., Boise.

KENTUCKY: *Examination.* Louisville, Sept. 23-24. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Augusta, July 1-2. Sec., Board of Registration in Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MASSACHUSETTS: *Examination.* Boston, July 8-11. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413 E State House, Boston.

MONTANA: Helena, Oct. 6-8. Sec., Dr. Otto G. Klein, 302 N. Main St., Helena.

NEW HAMPSHIRE: *Examination.* Concord, Sept. 11-12. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 455 S. Third St., Grand Forks.

OREGON: * *Examination.* Portland, July 23-25. Applications must be on file on or before July 9. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland.

SOUTH DAKOTA: * Pierre, July 15-16. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

WEST VIRGINIA: *Examination.* Charleston, June 30, July 1-2. Commissioner, Public Health Council, Dr. Newman H. Dyer, State Capitol, Charleston 5.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Sept. 16. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

COLORADO: *Examination.* Denver, Sept. 17-18. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

DISTRICT OF COLUMBIA: *Examination.* Washington, Oct. 20-21. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6012 E. Municipal Bldg., Washington.

FLORIDA: *Examination.* Gainesville, Nov. 1. Final date for filing application is Oct. 16. Sec., Dr. W. M. Emmell, University of Florida, Gainesville.

IOWA: Des Moines, July 8. Sec., Dr. Ben H. Peterson, Coe College, Cedar Rapids.

MICHIGAN: *Examination.* Ann Arbor and Detroit, Oct. 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

NEBRASKA: *Examination.* Omaha, Oct. 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, State Department of Health, Room 1009, State Capitol Bldg., Lincoln 9.

OKLAHOMA: The date for the next examination has not been set as yet but will be sometime in the spring of 1948. Sec., Dr. Frank Clinton Gallaher, 813 Braniff Bldg., Oklahoma City.

OREGON: *Examination.* Portland, Sept. 6. Final date for filing application is Aug. 20. Sec., Board of Higher Education, Basic Science Examining Committee, Mr. C. D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: *Examination.* Aug. 13. Chief, Division of Professional Regulation, Mr. Thomas B. Carey, 366 State Office Bldg., Providence.

WISCONSIN: *Examination.* Madison, Sept. 27. Sec., Mr. William H. Barber, Watson and Scott Streets, Ripon.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1937 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

53:359-540 (March) 1947. Partial Index

Presidential Address: Advance of American Medicine. L. F. Smead. —p. 359.
*Pregnancy in Patient with Hypertensive Disease. L. C. Chesley and J. E. Annitto.—p. 372.
Morbidity Associated with Induction of Labor. M. A. Roblee.—p. 382.
Treatment of Pelvic Tuberculosis in Female by Radiation Therapy Based on Experimental Evidence in Animal and Clinical Results in the Human. R. E. Campbell.—p. 405.
Background of Cancer of Corpus. J. A. Corscaden and S. B. Gusberg. —p. 419.
Pituitary Extract in Uterine Inertia: Is It Justifiable? N. J. Eastman. —p. 432.
Analysis of Deaths from Postpartum Hemorrhage. C. T. Beecham. —p. 442.
Treatment of Amenorrhea in Young Women. L. M. Randall.—p. 453.
Serology and Obstetrics. R. T. LaVake.—p. 459.
Rh Factor in Abortion. A. B. Hunt.—p. 467.
Red Degeneration of Uterine Myomas. R. L. Faulkner.—p. 474.
Conservative Treatment and Therapeutic Test for Endometriosis by Androgens. J. C. Hirst.—p. 483.
Second Stage of Labor: Internal Rotation. L. A. Calkins.—p. 488.
Obstetric Management of Pregnancy Complicated by Heart Disease. D. N. Henderson.—p. 494.
*Problem of Talcum Glove Powder and Contraindications for Its Employment. F. M. Douglass.—p. 500.
Discussion of Classification of Toxemias of Pregnancy. L. E. Savel. —p. 505.
Preliminary Evaluation of Dienestrol in Menopause. Rita S. Finkler and Sylvia Becker.—p. 513.
Absorption of Penicillin from Vagina. M. A. Goldberger, R. I. Walter and L. S. Lapid.—p. 529.

Pregnancy in Patient with Hypertensive Disease.—Chesley and Annitto collected from the files of their hospital records of women in whom recorded blood pressures before the twenty-fourth week of gestation permit the diagnosis of "hypertensive toxemia." In the thirteen year period from October 1931 through 1944 there were 301 pregnancies occurring in 218 women in whom the diagnosis of hypertensive disease could be established. Fetal loss in prior pregnancies was 35 per cent, in first hypertensive pregnancy 38 per cent, in subsequent pregnancies 40 per cent. Fetal loss increased with higher initial blood pressure, second trimester rises in blood pressure, higher pressures near delivery, decreased renal function, proteinuria and superimposed toxemia. Of 47 sisters of these hypertensive patients who were delivered at the hospital 45 per cent had at least one toxic pregnancy. Nearly 40 per cent of the hypertensive patients showed drops in the blood pressure in midpregnancy. Proteinuria of some degree occurred in half of the pregnancies. Renal function was normal in 93 per cent of the pregnancies. Premature separation of the placenta occurred in 5.6 per cent of the pregnancies. There were 13 immediate and late puerperal deaths among the 301 women. Of these 13 fatalities 8 were probably associated with hypertensive disease, while 5 were attributable to intercurrent causes.

Problem of Talcum Glove Powder.—As the result of studies on scars Douglass believes that many cases exhibiting postoperative incisional pain and tenderness may be charged to inflammatory reaction generated by magnesium silicate crystals deposited by the gloved hands or drains at the time of operation. Until a substance is found that does not have the disadvantages of magnesium silicate, the author advises that only enough magnesium silicate powder be applied to the inside of the gloves before dry sterilization to avoid the adhesion of their surfaces during the sterilizing process. Cream of tartar is applied to the hands in small quantities, enough to assist the hands into the sterile gloves. All powder remaining on the external surface of the gloves is removed by washing through two basins of sterile water.

American Journal of Physiology, Baltimore

148:531-764 (March) 1947. Partial Index

Application of Radioactive Red Cell Method for Determination of Blood Volume in Humans. G. R. Meneely, E. B. Wells and P. F. Hahn. —p. 531.
Sodium Therapy of Experimental Tourniquet Shock. H. N. Harkins. —p. 538.
Importance of Afferent Nervous Factor in Experimental Traumatic Shock: Effect of Chronic Deafferentation. S. C. Wang.—p. 547.
Prothrombin a Unitary Principle or a Complex? E. C. Loomis and W. H. Seegers.—p. 563.
Distribution and Movements of Carbon Dioxide and Chloride Between Cells and Serum of Oxygenated Human Blood. J. P. Peters, M. Tulin, T. S. Danowski and Pauline M. Hald.—p. 568.
Metabolism of Glucose in Starvation and Water Deprivation. A. Wollenberger and M. A. Linton Jr.—p. 597.
Effect of Restricted Caloric Intake on Longevity of Rats. W. H. Riesen, E. J. Herbst, Catherine Walliker and C. A. Elvehjem.—p. 614.
Effects in Young Men Consuming Restricted Quantities of B Complex Vitamins and Protein, and Changes Associated with Supplementation. G. H. Berryman, C. R. Henderson, N. C. Wheeler and others. —p. 618.
Renal Hyperemia in Dogs Induced by Oral Administration of Cinchona Alkaloids. E. P. Hiatt and Virginia Suhrie.—p. 684.
Influence of Thyroid Hormone on Effector Systems of Mammalian Heart. F. Hoffman, Elena J. Hoffman and J. Talesnik.—p. 689.
Further Studies on Antigonadotropin Formation Following Gonadotropic Hormone Administration. J. H. Leathem.—p. 700.
Studies on Permeability of Leukocyte. J. L. Tullis.—p. 708.
Difference in Action of Parasympathetic Drugs in Application to Serosa or Mucosa of Isolated Intestine. A. E. Meyer and Jean P. McEwen. —p. 715.
Study of Coronary Flow Under Conditions of Hemorrhagic Hypotension and Shock. D. F. Opdyke and R. C. Foreman.—p. 726.
Phasic Changes in Inferior Cava Flow of Intravascular Origin. R. W. Eckstein, C. J. Wiggers and G. R. Graham.—p. 740.
Comparison of Changes in Inferior Cava Flow After Hemorrhage and Circulatory Failure Following Transfusion. R. W. Eckstein, G. R. Graham, I. M. Liebow and C. J. Wiggers.—p. 745.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

57:281-408 (March) 1947

Radium Treatment of Cancer of Cervix: Historical Review. Janeway Memorial Lecture. F. W. O'Brien.—p. 281.
Aerosinusitis, with Special Reference to Roentgen Diagnosis. J. A. Cocke.—p. 298.
*Roentgenologic Findings in Myasthenia Gravis Associated with Thymic Tumor. C. A. Good.—p. 305.
*Myelosclerosis with Leukoerythroblastic Anemia. M. L. Sussman. —p. 313.
Lacunar Skull (Lückenschädel) of Newborn: Report of 7 Cases. R. G. Karshner and D. L. Reeves.—p. 321.
Amebiasis: Roentgen Study of Relatively Early Gastrointestinal Findings. P. J. Hodes and L. Mammoser.—p. 329.
Benign Ulcer of Fourth Portion of Duodenum. G. J. Culver, T. F. Frawley and W. J. Goode.—p. 333.
Nephrography. H. S. Weens and T. J. Florence.—p. 338.
Massive Congenital Hydronephrosis: Case Report. W. C. Hall and E. A. Ockuly.—p. 342.
Significance of Retracted and Curved Horizontal Fissure of Lungs. R. E. Dwork.—p. 344.
Fractures of Ribs, with Comparison of Standard and One-Film Two-Exposure Technic. F. Liberson.—p. 349.
Avascularization of Astragalus. D. C. Weir.—p. 355.
Double Uterus: Report of Case. W. G. Herrman.—p. 357.
Biologic Evaluation of 20 Million Volt Roentgen Rays: II. Decoloration of Hair in Mice. H. B. Chase, H. Quastler and L. S. Skaggs. —p. 359.
Oil Circulation in Diagnostic Roentgen Tubes. R. H. Morgan and W. W. Van Allen.—p. 362.

Roentgenologic Findings in Myasthenia Gravis.—Good made a study of 100 consecutive cases of myasthenia gravis that had been observed at the Mayo Clinic since 1941. In 17 of these roentgenologic examination disclosed a tumor in the anterior mediastinum. Exploratory operation was performed in 11 cases and necropsy in 3 other cases. Microscopic examination in all but 1 case demonstrated that the tumor originated in the thymus. Thymic tumors found in this series have been grouped into two classes according to the ease of roentgenologic recognition. One type is well defined and is easily seen in all roentgenograms. The other type is plaque-like in shape and is easily overlooked. In order not to overlook thymic tumors the recommended roentgenologic procedure consists in roentgenoscopy and lateral roentgenograms of the thorax as well as the more customary stereoscopic roentgenograms made in the frontal projection.

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Myelosclerosis with Leukoerythroblastic Anemia.—Sussman presents the histories of 9 patients in whom myelosclerosis was demonstrated roentgenologically in the presence of leukoerythroblastic anemia. This type of myelosclerosis is usually characterized by an increase of megakaryocytes and platelets and for this reason it is sometimes designated as megakaryocytic leukemia. Differentiation from other conditions associated with myelosclerosis is not difficult. Although the disease may be chronic, there is usually progression into frank leukemia as seen at postmortem examination.

Anesthesiology, New York

8:113-226 (March) 1947

Analgesia and Anesthesia in Obstetrics. C. S. Hellijas, R. M. Tovell and K. R. Holt.—p. 113.
Cell Respiration and Fermentation: Background for Study of Narcotic Action. J. Field.—p. 127.
Clinical Use of Metopryl as Anesthetic Agent. A. J. Fisher and R. J. Whitacre.—p. 156.
Respiratory Reflex Originating from Thoracic Wall of a Dog. R. W. Whitehead and W. B. Draper.—p. 159.
Deterioration of Solutions of Pentothal Sodium. M. H. Robinson. —p. 166.
*Use of Curare in Infants and Children. S. M. Smith.—p. 176.
Hypobaric Pontocaine Spinal Anesthesia: 1,640 Consecutive Cases. P. C. Lund and A. C. Rumball.—p. 181.

Curare for Infants and Children.—Smith used curare in the treatment of 41 infants and children who ranged in age between 20 hours and 30 months and in weight between 4½ and 29 pounds (2 and 13 Kg.). Intocostrin was used in 8 cases and d-tubocurarine chloride in 33 cases. These curare preparations were given intravenously to 15 patients, intramuscularly to 21 and by other routes to 5. The initial dose varied from 4 to 44 units. The supplemental dose ranged from 2 to 20 units. The total dose varied from 0.16 to 3.6 units per pound. The interventions included Rammstedt's operation, appendectomy, splenectomy and 15 other intra-abdominal procedures, also herniorrhaphy and repair of diaphragmatic hernia. Atropine was given as the sole premedication to 9 patients. Two other patients had atropine and morphine, 2 had atropine and phenobarbital sodium and 28 received no premedication. No difficulty was encountered when atropine was not administered. The operative conditions and postoperative results were excellent. In view of the conclusive demonstration that curare has no significant central depressant or analgesic action, the author believes that curare should always be employed in combination with agents capable of producing analgesia or anesthesia.

Annals of Internal Medicine, Lancaster, Pa.

26:341-488 (March) 1947

Separation of Blood into Fractions of Therapeutic Value. E. J. Cohn. —p. 341.
*Use of Gamma Globulin from Large Pools of Adult Blood Plasma in Certain Infectious Diseases. J. Stokes Jr.—p. 353.
*Hemophilia: Clinical Use of Antihemophilic Globulin. G. R. Minot and F. H. L. Taylor.—p. 363.
Other Uses of Plasma Fractions, with Particular Reference to Serum Albumin. C. A. Janeway.—p. 368.
Bronchiogenic Carcinoma: Analysis of 343 Cases. R. K. Hollingsworth. —p. 377.
Rehabilitation: Wartime Lessons Applied to Peacetime Needs. H. A. Rusk.—p. 386.
Penicillin in Treatment of Neurosyphilis: IV. Cerebrospinal Fluid Changes in Cases of Symptomatic Neurosyphilis. F. W. Reynolds. —p. 393.
Management of Infectious Hepatitis. R. B. Capps and M. H. Barker. —p. 405.
Reflex Sympathetic Dystrophy: Report on 57 Cases. J. A. Evans. —p. 417.
Spondylosis and Spondylarthritis. J. Borak.—p. 427.

Gamma Globulin from Large Pools of Blood in Infectious Diseases.—Stokes points out that the protein fraction of blood plasma termed gamma globulin has assumed a greatly enhanced significance as a result of the fractionation of plasma and of the pooling of plasma for fractionation from hundreds of thousands of blood donors under the system of blood collection inaugurated by the American Red Cross. The large size of the plasma pools tends to assure a surprisingly uniform titer of antibodies against the infectious agents endemic to the geographic area in which the blood donors reside. Gamma globulin from fractionated pools of plasma concentrates and preserves such antibodies in a readily usable form, which thus far apparently has been free from the danger of serum hepatitis. The amount of specific protective antibodies in the gamma globulin and their effectiveness against various epidemic diseases obviously differs. The author discusses the value of gamma globulin in measles, mumps, infectious hepatitis and poliomyelitis.

Antihemophilic Globulin.—Minot and Taylor say that in addition to decreasing the coagulation time of hemophilic blood by the use of globulin preparations progress has been made in the development and utilization of thrombin preparations for the control of hemorrhage. The introduction of such hemostatics has materially lowered the dangers attendant on surgical operations on hemophilic patients.

Archives of Internal Medicine, Chicago

79:253-364 (March) 1947

Present Status of Problem of Amebiasis. E. C. Albright and E. S. Gordon.—p. 253.
*Hemolytic Streptococcic Sore Throat: Course of Acute Disease. L. A. Rantz, W. W. Spink and P. J. Boisvert.—p. 272.
*Bronchogenic Adenoma: Benign Tumor of Bronchus. B. M. Fried. —p. 291.
Primary Hypertrophy and Hyperplasia of Parathyroid Glands Associated with Duodenal Ulcer: Report of Additional Case, with Special Reference to Metabolic Gastrointestinal and Vascular Manifestations. H. M. Rogers, F. R. Keating Jr., C. G. Morlock and N. W. Barker. —p. 307.
Coincidence of Diabetes Mellitus and Hypopituitarism. F. Feldman, J. B. Roberts, S. Susselman and B. Lipetz.—p. 322.
*Penicillin Therapy of Subacute Bacterial Endocarditis: Study of End Results in 34 Cases, with Particular Reference to Dosage, Methods of Administration, Criteria for Judging Adequacy of Treatment and Probable Reasons for Failures. W. S. Priest, J. M. Smith and C. J. McGee, with technical assistance of Irene Gilbert and Dolores Kenney. —p. 333.

Acute Hemolytic Streptococcic Sore Throat.—Rantz and his co-workers described in an earlier paper the initial phase of acute sore throat caused by group A hemolytic streptococci in young men. They now report the subsequent events which occurred in this group of patients during the initial phase of the disease and the suppurative complications that followed. The degree and duration of fever and the initial erythrocyte sedimentation rate were poorly correlated with the degree of physical abnormality of the throat and neck. A more prolonged febrile illness occurred if a cutaneous rash was present. The initial leukocyte count varied with the severity of the acute disease. A rash occurred only when the infecting streptococcus was of type 3, 17, 19 or 30. The disease caused by six serologic types was otherwise similar. Several therapeutic regimens involving the administration of sulfadiazine and penicillin alone and in combination were utilized. None effectively terminated the disease or consistently eradicated the hemolytic streptococcus from the nose and throat.

Bronchogenic Adenoma.—Fried points out that bronchogenic adenoma is the commonest benign bronchial tumor, comprising from 6 to 12 per cent of all bronchial neoplasms. It is prevalent in patients in the third and fourth decades and occurs oftener in women and more frequently on the right side. It occurs in bronchi accessible to inspection with the bronchoscope. Therapy applied in the early stages eradicates the disease, while dilatoriness is fraught with dangerous complications, such as putrid abscess and bronchiectasis, pneumonitis and empyema.

Penicillin Therapy of Subacute Bacterial Endocarditis.—Priest and his associates review the end results obtained in 34 unselected cases of subacute bacterial endocarditis in which the patients were treated with penicillin. Twenty-two are alive and free from evidence of the disease from thirteen to thirty-five months after completion of treatment. Duration of the disease ranged from one and a half to fifty-two weeks before admission. Streptococcus viridans predominated as the offending organism, but six other organisms were encountered. Administration of penicillin in isotonic solution of sodium chloride by continuous intravenous drip was found superior to intermittent intramuscular injection in the maintenance of constant adequate blood levels and of the patient's comfort. To increase the dose of penicillin seems simpler than to use para-aminohippuric acid or diodrast to retard the rate of excretion from the kidneys. No clinical or histologic evidence was found to favor the use of anticoagulants. The danger of fatal hemorrhage suggests caution

in their use. Adequate daily dosage over a sufficiently long period is the most important single factor in treatment. With the use of the continuous intravenous drip the minimal efficacious dose is 500,000 units per day, with administration of 1,000,000 to 2,000,000 units per day or more if clinical criteria dictate or if the disease is of over twelve weeks' duration. If intermittent intramuscular injection is the only feasible method, minimal doses of 100,000 units at ninety minute intervals are recommended. Treatment should be continued for not less than four weeks.

Archives of Ophthalmology, Chicago

37:261-402 (March) 1947

*Associated Systemic Factors in Retinitis Pigmentosa. I. Givner and M. Bruger.—p. 261.
Use of Frozen-Dried Cornea as Transplant Material. I. H. Leopold and F. H. Adler.—p. 268.
Modified Corneal Incision with Iridodialysis and Iridectomy for Opening Anterior Chamber Angle. F. C. Parker.—p. 277.
Hemifacial Spasm: Report of 2 Cases. D. M. Gordon.—p. 282.
Complete Unilateral Ophthalmoplegia Due to Primary Carcinoma of Sphenoidal Sinus: Sphenoidal Fissure-Optic Canal Syndrome with Complete Ophthalmoplegia; Report of Case. I. S. Tassman.—p. 294.
Treatment of Late Postoperative Intraocular Infections with Intraocular Injection of Penicillin. J. Schneider and S. S. Frankel.—p. 304.
Pseudo-Graefe Phenomenon. J. Ferreira Filho, translated from the Portuguese by E. Resencourt.—p. 308.
Diphthalmos in Six Month Premature Infant. D. Wexler and A. Kornzweig.—p. 318.
Pathogenesis of Glaucoma and "Glaucomatous" Atrophy of Optic Nerve. L. Hess.—p. 324.
Sensorial Retinal Relationship in Concomitant Strabismus. H. M. Burian.—p. 336.
Congenital Vertical Motor Pareses. G. J. Epstein.—p. 369.
Primary Tuberculosis of Conjunctiva. G. M. Bruce and D. Locatcher-Khorazo.—p. 375.

Associated Systemic Factors in Retinitis Pigmentosa.—Givner and Bruger studied the basal metabolism, pressure and chemistry of the spinal fluid, vitamin content of the blood plasma, hepatic function, serum cholesterol, creatinine and creatine in the urine, pupillary reactions, the auditory apparatus and the capillaries of 14 patients with retinitis pigmentosa. The basal metabolic rate was mostly normal or slightly below. Eleven patients had creatinuria. This series included 8 males and 3 females. The spinal fluid pressure was increased in 3 of 12 patients, but readings in most of the other patients bordered on the upper limit of normal rather than falling at the lower levels. In 3 of 12 patients the total protein content of the spinal fluid was increased. Hepatic damage was not demonstrable in any of the 12 patients investigated. The fasting ascorbic acid content of the plasma was reduced in 7 of 9 patients. Vitamin A studies on the serum of 7 patients gave normal values. In 11 patients pupillographic studies showed tonohaptic reactions and other evidences of diencephalic disorders. Analysis of the blood for retention of urea nitrogen and determination of the specific gravity of the urine after administration of pitressin failed to reveal measurable impairment in the renal function of 13 patients. Physical examination, including neurologic studies, gave essentially normal findings except for the high incidence of high-arched palate and nerve deafness, as revealed by audiometric tests. Seven of 8 patients thus studied revealed impairment of hearing. Two patients were deaf-mutes. Examination failed to reveal abnormalities in the capillaries of the finger bed.

Bulletin of U. S. Army Med. Dept., Washington, D.C.

7:247-330 (March) 1947

Psychiatric Survey at Nuremberg Trials. W. H. Dunn.—p. 274.
Medical Experiences as Prisoner of War in Germany. A. L. Cochrane.—p. 285.
Ankylosing Spondylitis: Report of 30 Cases. S. Solomon.—p. 291.
Fatigue in B-29 Crewmen. H. A. Zimmerman.—p. 304.
Methyl Bromide Delousing, DDT Insecticides and Rodent Control Problems at New York Port of Embarkation. H. H. Richardson.—p. 308.
Neurosis and Group Motivation. M. Stein.—p. 317.

7:331-412 (April) 1947

Bronchogenic Carcinoma. H. S. Van Ordstrand.—p. 350.
Lessons from Military Psychiatry for Civilian Psychiatry. W. C. Menninger.—p. 356.
Treatment of Shock by Intra-Arterial Infusion. I. H. Page.—p. 366.
Tetanus in the United States Army in World War II. A. P. Long and P. E. Sartwell.—p. 371.
Psychiatrist in an Armored Division. E. W. Mericle.—p. 386.

California Medicine, San Francisco

66:107-212 (March) 1947

Carcinoma of Stomach. T. F. Mullen.—p. 107.
What Can Internist Do to Get More Early Cases of Carcinoma of Stomach to the Surgeon? C. D. Mote.—p. 108.
What Does Gastroscopy Offer in Early Diagnosis of Cancer of Stomach? R. Schindler.—p. 110.
Problems in X-Ray Diagnosis of Early Cancer. K. S. Davis.—p. 117.
Recent Advances in Surgical Treatment of Cancer of Upper End of Stomach. G. W. Nagel.—p. 118.
Radical Surgical Treatment of Gastric Cancer. G. T. Pack.—p. 120.
Use of Thymol Turbidity Test as Aid in Diagnosis of Dysfunctions of Liver. D. C. Dodds.—p. 125.
Physiologic Basis for Treatment of Intractable Asthma. H. Miller.—p. 128.
Management of Patients with Various Types of Goiter. M. H. Soley.—p. 131.

Delaware State Medical Journal, Wilmington

19:23-40 (Feb.) 1947

Diagnosis of Intraocular Tumors: Demonstration of Kodachrome Slides. A. J. Bedell.—p. 23.
Hyaluronidase. O. J. Pollak.—p. 27.
Skin Test to Measure Susceptibility to Whooping Cough: Preliminary Report. G. J. Boines.—p. 29.

Florida Medical Association Journal, Jacksonville

33:467-532 (March) 1947

Functional Disorders of Menstruation. C. J. Collins.—p. 497.

33:533-594 (April) 1947

Discussion of Relationships Between Endocrinology and Legal Medicine. C. P. Lamar.—p. 563.
Cancer Control Agencies. L. J. Netto.—p. 568.

Journal of Clin. Endocrinology, Springfield, Ill.

6:769-868 (Dec.) 1946

*Effect of Testosterone Propionate on Carcinoma of Female Breast with Soft Tissue Metastases. J. B. Herrmann and F. E. Adair.—p. 769.
Craniopharyngioma with Panhypopituitarism: Case Report with Clinical and Pathologic Study. T. H. McGavack, Andrea Saccone, Mildred Vogel and R. Harris.—p. 776.
Bilateral Cryptorchism in Identical Twins. S. J. Glass.—p. 797.
*Chronic Cystic Mastitis and Sterility. J. H. Morton.—p. 802.
Use of Methyl Testosterone in Treatment of Premature Infants. E. K. Shelton and A. E. Varden.—p. 812.
Gastric Dysfunction of Hypoestrogenic Origin: Treatment with Benzestrol. A. R. Hufford.—p. 817.

Effect of Testosterone Propionate on Metastases of Carcinoma of Breast.—Herrmann and Adair administered testosterone propionate in doses which influence osseous metastases to 3 patients with soft tissue metastases. These doses proved ineffective. One patient showed temporary regression of the lesions. Massive daily doses of the androgen were administered to 3 other patients. One of these patients showed striking regression of the lesions. The administration of large amounts of androgen apparently had no effect on the subsequent response of lesions to roentgen therapy. During the time testosterone propionate was administered, there was in every patient, except 1, an increase in weight which was lost subsequent to the withdrawal of the androgen. Facial hirsutism, deepening of the voice, acne and an increase in libido were encountered in all the patients.

Chronic Cystic Mastitis and Sterility.—According to Morton, chronic cystic mastitis is the result of a relative or absolute excess of estrogens producing abnormal proliferation of the mammary ducts. Although the estrogenic level may be within normal limits, pregnandiol has been shown to be low or absent. Review of the literature reveals evidence indicating the endocrine origin of chronic cystic mastitis, but no suggestion of a relationship between this condition and infertility could be found. In 24 infertile women with mammary dysplasia there was a parallelism between the occurrence of chronic cystic mastitis and an absent or poorly developed secretory endometrium. This indicates that the endometrial and mammary abnormalities are both manifestations of disturbed estrogen-progesterone balance. Both this group and a second group of 15 patients complaining of mammary symptoms alone responded to treatment with chorionic gonadotropin, with improvement or disappearance of the chronic cystic mastitis. Of the 24 infertile women 8 subsequently became pregnant.

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Journal of Immunology, Baltimore

55:205-308 (March) 1947

Effect of Heat on Antihemocyanin. Edna M. Follensby and S. B. Hooker, with assistance of Elizabeth T. Leach and Margaret C. Derrow.—p. 205.

Studies on Nature of Antibodies Produced in Vitro from Bacteria with Hydrogen Peroxide and Heat. E. C. Rosenow.—p. 219.

Immunization of Humans and Animals with Gas Gangrene Toxoids. A. A. Tytell, M. A. Logan, Alice G. Tytell and J. Tepper.—p. 233.

Studies on Botulinum Toxoid, Types A and B: I. Production of Alum Precipitated Toxoids. Clara Nigg, G. A. Hottle, L. L. Coriell, A. S. Rosenwald and G. W. Beveridge.—p. 245.

Id.: II. Methods for Determining Antigenicity in Animals. G. A. Hottle, Clara Nigg and J. A. Liehty.—p. 255.

*Comparative Study of Pathogenicity and Antigenicity of Four Strains of Herpes Simplex. A. L. Florman and F. W. Trader.—p. 263.

Clinical Behavior, Incubation Period and Pathology of Tetanus Induced in White Swiss Mice by Injection of Crystalline Tetanal Toxin. L. Pillemer and W. B. Wartman.—p. 277.

Size and Morphology of Elementary Bodies of Psittacosis Lymphogranuloma Group of Viruses. T. J. Kurotchkin, R. L. Libby, E. Gagnon and H. R. Cox.—p. 283.

Effect of Tris(Beta-Chloroethyl)amine on Antibody Production in Goats. F. S. Philips, Frances H. Hopkins and M. L. H. Freeman.—p. 289.

Immunologic Relationship of Mammary Carcinomas Developing Spontaneously in Female Mice of High Tumor Line. L. Gross.—p. 297.

Pathogenicity and Antigenicity of Strains of Herpes Simplex.—Florman and Trader made comparative studies of pathogenicity and antigenicity of four strains of herpes simplex in order to investigate some of the differences which may exist between strains of a single viral species. Mice, rabbits, guinea pigs, white rats, hamsters, cotton rats and chick embryos were observed after inoculation of mouse brain emulsions by various routes. Although herpes simplex is a pantropic virus, differences between strains are accentuated by certain tests. Thus, death of the majority of animals following corneal infection of the rabbit or intranasal inoculation of the cotton rat can be used to indicate strains with prominent neurotropic tendencies, while severe local reactions after intradermal injection of the guinea pig are indicative of dermatotropism. These distinctions probably hold only for the particular species of animals and routes tested, as the strain which was most dermatotropic in the laboratory was the cause of fatal encephalitis in a human being. It is not known whether these differences in potentiality of herpes strain are of epidemiologic significance.

Journal of Investigative Dermatology, Baltimore

8:123-182 (March) 1947

Virus Studies* on Cutaneous Material: Inoculation of Chick Chorioallantoic Membrane with Material from Cutaneous Lesions. Z. Felsher.—p. 123.

Allergic Eczematous Contact Type Dermatitis Caused by DDT. M. Leider.—p. 125.

*Erythema Multiforme Exudativum: Personal Observations of Cases in Willard Parker Hospital for Contagious Diseases (1932-1946). M. J. Costello.—p. 127.

*Primary Systematized Amyloidosis with Macroglossia: Syndrome Related to Bence-Jones Proteinuria and Myeloma. L. A. Brunsting and I. D. MacDonald.—p. 145.

Impetigo Contagiosa Treated Parenterally with Penicillin-Beeswax. Major T. H. Finkle.—p. 167.

Improved Method for Diagnosing Pemphigus. D. I. Macht and M. Ostro.—p. 171.

Dermatitis Following Paratoluylenediamine Hair Dye. Margaret W. Lawrence.—p. 177.

Erythema Multiforme Exudativum.—Thirty-three cases of erythema bullosum malignans of the pluriorificial type occurred at Willard Parker Hospital for Contagious Diseases between 1932 and June 1946. Of the cases selected for study by Costello, 17 are reported in detail with one complete postmortem examination. Destructive lesions of the cornea and conjunctiva terminating in grave ocular sequelae such as panophthalmitis and blindness were the most urgent features which required constant ophthalmologic care. Vaginal and urethral stenosis occurred in 2 cases. Three patients died and 1 became blind. An upper respiratory onset occurred in over half the patients. A virus cause is suspected. The relatively large number of patients suffering from this disease were admitted to Willard Parker Hospital for Contagious Diseases because of the resemblance of this dermatosis to such contagious diseases as chickenpox, measles, influenza, agranulocytic angina and pemphigus. The treatment is symptomatic. Penicillin was administered to 2 patients and aided in their recovery.

Systematized Amyloidosis with Macroglossia.—Brunsting and MacDonald present the record of 4 patients which illustrates the characteristic signs and symptoms of the rare syndrome of systematized amyloidosis of the skin and muscles with widespread involvement of the skin and with macroglossia. In 2 instances necropsy revealed extensive deposits of amyloid in the heart and the musculature of the gastrointestinal tract, while the liver, spleen, kidneys and adrenals were spared, for the most part. The relation between amyloidosis and multiple myeloma is brought out by the demonstration of Bence Jones proteinuria and of abnormal cells of plasmocytoma in the bone marrow. Emphasis is placed on biopsy of the skin, tongue and skeletal muscles; vital staining of amyloid in the skin by the subcutaneous injection of congo red; examination of the urine for Bence Jones protein as well as of the blood proteins, including the albumin-globulin ratio; roentgenograms of the bones, and sternal aspiration in search of plasmocytoma in the bone marrow. The evidence presented confirms that amyloidosis and myeloma are part of the same systemic process, the origin of which remains obscure.

Journal of Lab. and Clinical Medicine, St. Louis

32:223-348 (March) 1947

Blood Transfusion Studies: III. Relationship of Hemoglobinemia and of pH of Urine to Renal Damage Produced by Injection of Hemoglobin Solutions into Dogs. E. B. Flink.—p. 223.

*Treatment of Pernicious and Related Anemias with Synthetic Folic Acid: I. Observations on Maintenance of Normal Hematologic Status and on Occurrence of Combined System Disease at End of One Year. C. F. Vilter, R. W. Vilter and T. D. Spies.—p. 262.

Studies of Distribution of Intravenously Administered Colloidal Sols of Manganese Dioxide and Gold in Human Beings and Dogs Using Radioactive Isotopes. C. W. Sheppard, E. B. Wells, P. F. Hahn and J. P. B. Goodell.—p. 274.

Effect of Pregnancy on Complement of Guinea Pigs. E. E. Ecker, C. W. Hiatt and L. M. Barr.—p. 287.

Toxicity Studies of α (4-Hydroxy-3,5-Diiodo-Benzyl-N-Butyric Acid) and α (4-Hydroxy-3,5-Diiodo-Benzyl-N-Caproic Acid): Compounds Proposed as Gallbladder Contrast Agents. D. M. Grayzel and S. Natelson.—p. 292.

Synthetic Folic Acid in Pernicious and Related Anemias.—According to Vilter and his associates folic acid in doses of 10 to 15 mg. daily or 30 mg. three times a week given orally maintained 21 persons with pernicious anemia in apparent hematologic remission for one year. Three patients with pernicious anemia whose treatment was begun during a relapse responded satisfactorily. Folic acid given orally controlled the manifestations of sprue in 2 persons for one year, nutritional macrocytic anemia in 1 person for seven months and macrocytic anemia secondary to ileosigmoidostomy in 1 person as/or more effectively than liver extract. Folic acid in doses of 10 to 50 mg. daily did not prevent the development of neurologic signs, and doses of from 100 to 500 mg. daily did not stop the progression of the neurologic symptoms, when liver extract promoted rapid improvement. These observations suggest that an unknown factor or factors in liver other than folic acid are essential for maintaining the integrity of the central and peripheral nervous systems in persons with pernicious anemia. Folic acid cannot be considered satisfactory or complete treatment for pernicious anemia and should not replace potent liver extract in the routine treatment.

Journal of Nervous and Mental Disease, New York

105:221-342 (March) 1947

Diagnostic Evaluation of Early Schizophrenia. P. Polatin and P. Hoch.—p. 221.

Serratus Magnus Palsy, with Report of 5 Cases. F. C. Ansanelli.—p. 231.

Psychosynthesis of Amnesia: Report of 2 Cases Treated by Hypnosis. G. D. Weickhardt and K. H. Langenstrass.—p. 238.

Growth Concept of Nervous Integration: VI. B. On Imagined Hearing: Second Contribution to New Theory of Hearing. A Proposed Solution for Dilemma of Taste Physiology. The Integrative Function of Tractus Solitarius and Its Relation to Ego, Superego and Id Systems. Summary of Growth Concept of Nervous Integration. D. E. Schneider.—p. 255.

Study in Attempted Suicide. J. D. Teicher.—p. 283.

Study of Suicidal Soldiers in European Theater After VE Day. W. H. Kupper.—p. 299.

Journal of Neurophysiology, Springfield, Ill.

10:89-164 (March) 1947. Partial Index

Decerebrate Rigidity. A. A. Ward Jr.—p. 89.
Injury Potentials Along Peripheral Nerves in Relation to Histologic Structure. B. Rexed.—p. 113.
Effect of Afferent Impulses on Cortical Suppressor Areas. E. Gellhorn. —p. 125.
Prolonged Facilitation of Synaptic Excitation in Sympathetic Ganglia. M. G. Larrabee and D. W. Bronk.—p. 139.
Effect of Di-isopropyl Fluorphosphate (DFP) on Action Potential and Cholinesterase of Nerve. H. Grundfest, D. Nachmansohn and M. A. Rothenberg.—p. 155.

Journal of Pediatrics, St. Louis

30:229-370 (March) 1947

*Effects of Maternal Undernutrition on the Newborn Infant in Holland (1944-1945). C. A. Smith.—p. 229.
Infantile Mortality in Budapest in Year 1945: As Reflected by Material of Children's Clinic of University. E. Kerpel-Fronius.—p. 244.
*Children Born During the Siege of Leningrad in 1942. A. N. Antonov. —p. 250.
*Airblock in the Newborn Infant. G. W. Salmon, G. B. Forbes and H. Davenport.—p. 260.
Sulfadiazine Prophylaxis in Children and Adolescents with Inactive Rheumatic Fever. Janet S. Baldwin.—p. 284.
Cardiopathy of Sickle Cell Anemia and Its Differentiation from Rheumatic Carditis. Barbara Cutting Halpern and H. K. Faber.—p. 289.
Factors in Etiology of Congenital Heart Anomalies. I. Dogramaci and H. Green.—p. 295.
Dacryostenosis. H. W. Price.—p. 302.
Intestinal Obstruction of Newborn: Report of 5 Patients Successfully Relieved by Surgery.—p. 306.
General Anesthesia in Difficult Pedodontic Patient. Mary Karp and G. W. Teuscher.—p. 317.

Effects of Maternal Undernutrition on Newborn Infants.—Smith points out that during the six or seven months which preceded the liberation of northwestern Holland in May 1945 a state of severe undernutrition was prevalent. The effects of this nutritional crisis on the infant at birth were investigated especially in the cities of Rotterdam and The Hague. During the period, and apparently because of the low food supply, about 50 per cent of urban women became amenorrheic and presumably infertile. The birth weights of infants decreased and rose after restoration of food in a manner indicating that fetal weight gain is particularly related to the maternal diet of the last half or last trimester of pregnancy. Significant decline in length also occurred but was less clearly apparent than the change in weight. No conclusions could be drawn with regard to the frequency of abortion, while that of prematurity was insignificantly increased. Stillbirth was definitely not increased, nor was neonatal mortality among infants born in hospitals. A slight but statistically insignificant increase in malformations did occur. Several of these results are widely at variance with those of other studies, so that great caution must be used in evaluating the maternal-fetal aspects of nutrition.

Children Born During Siege of Leningrad.—Antonov states that during the severe hunger period in the first half of 1942 the stillbirth rate rose to 5.6 per cent, twice the normal figure; the rate of premature births reached the unusually high figure of 41.2 per cent. The average weight of infants born at term in the first half of 1942 was 500 to 600 Gm. less than normal. The physiologic loss of weight continued longer than usual; the average loss exceeded the usual figure. The morbidity of the newborn was unusually high, 32.3 per cent, owing in part no doubt to their low vitality. The most frequent diseases were scleredema, sclerema and pneumonia. The mortality of the newborn was unusually high, 9 per cent for those born at term and 30.8 per cent for those born prematurely. Antonov does not contradict the prevailing opinion that the fetus behaves like a parasite in the mother's body, but on the basis of this material he concludes that the condition of the host, the mother's body, is of great consequence to the fetus, and that severe hunger of the mother affects decidedly the development of the fetus and the vitality of the newborn child.

Airblock in Newborn Infants.—Salmon and his co-workers are concerned with the condition produced by escape of air from the normal respiratory pathways into tissues in which it is not normally present. They believe that this condition, which has been designated as airblock, is frequently unappreciated at necropsy. Methods of postmortem examination used in the newborn period should include measures to detect the presence of aberrant air. In newborn infants interstitial pulmonary air can produce pneumothorax by either of two mechanisms: (*a*) rupturing the visceral pleura directly or (*b*) first producing mediastinal emphysema and then rupturing the mediastinal pleura. The possibility of pulmonary interstitial emphysema producing air embolism needs further investigation, as does also the effect of pulmonary interstitial emphysema on the heart. Factors which may lead to the production of pulmonary interstitial emphysema are not infrequently present in the newborn period. The incidence of pulmonary interstitial emphysema in this period is undoubtedly higher than is commonly believed.

Kentucky Medical Journal, Bowling Green

45:57-88 (March) 1947

Summer Diarrhea of Infants and Children in Office Practice. L. C. Hall.—p. 63.
Minor Surgery: Some Considerations That May Interest Family Physician. C. C. Sparks.—p. 69.
Traumatic Diaphragmatic Hernia. R. W. Robertson.—p. 74.

45:89-126 (April) 1947

Antepartum Bleeding. R. F. Monroe.—p. 92.
Postoperative Care of Surgical Patient. J. T. Funk.—p. 97.
Recent Advances in Surgery. D. W. Barrow.—p. 102.
Dr. Hume's Birthday. L. T. Minish.—p. 106.
Salt Intoxication: Report of Case. E. P. Scott and C. C. Rotondo. —p. 107.
The Kidney and Hypertension. H. E. Martin.—p. 110.

New England Journal of Medicine, Boston

236:383-418 (March 13) 1947

Arthritis in Mediterranean Theater of Operations: I. Incidence of Joint Disease—Clinical Description of Rheumatoid Arthritis. C. L. Short. —p. 383.
*Prevention of Postoperative Pulmonary Embolism: Analysis of 52 Fatal Cases in Six Years. J. A. Evans and R. J. Boller.—p. 392.
Neuropathic Foot Lesions in Diabetes Mellitus. C. C. Bailey and H. F. Root.—p. 397.
Synthetic Plastic Materials in Surgery. F. D. Ingraham, E. Alexander Jr. and D. D. Matson.—p. 402.
Mesothelioma of Pleura and Pericardium, with Metastases to Right Lung and Retroperitoneal Lymph Nodes.—p. 407.
Colloid Carcinoma of Sigmoid, with Perforation and Localized Peritonitis.—p. 415.

236:419-456 (March 20) 1947

Second Day Encephalography, with Particular Reference to Size of Ventricles. R. Schatzki, D. H. Baxter and C. E. Troland.—p. 419.
Arthritis in Mediterranean Theater of Operations: II. Clinical Description of Hypertrophic Arthritis, Arthralgia and Psychogenic Rheumatism. C. L. Short.—p. 429.
Mongolism Following Intercurrent Infectious Disease in Pregnancy. T. H. Ingalls and J. A. V. Davies.—p. 437.
Pathology. T. B. Mallory.—p. 438.
Dissecting Aneurysm of Aorta, with Rupture into Pericardium. Cardiac Tamponade.—p. 443.
Subacute Bacterial Endocarditis: Aortic Valve. Cerebral Mycotic Aneurysm, with Subarachnoid Hemorrhage.—p. 445.

Prevention of Postoperative Pulmonary Embolism.—Reviewing 52 fatal cases of postoperative pulmonary embolism, Evans and Boller found that the greatest number occurred in patients 50 to 60 years of age. Fifty-four per cent of the deaths occurred after extensive pelvic or lower abdominal surgery or both. This poses the question of routine prophylactic administration of heparin in Pitkin's menstruum and dicumarol shortly after such major surgical procedures. The variability of the signs and symptoms associated with pulmonary embolism emphasizes that a thrombotic process should be suspected postoperatively in every case of fever or tachycardia or both. Fifty-two per cent of the initial pulmonary emboli occurred between the sixth and sixteenth postoperative days, although a sufficient number occurred before and after that period to make one continuously on the alert for trouble. Routine examination of the legs postoperatively is required for evidence of phlebothrombosis. In 85 per cent of the 52 fatal cases, some preventive measure was indicated by premonitory signs, usually in the form of elevated temperature or tachycardia or both occurring a sufficient time before the fatal embolism to allow adequate therapy to be administered.

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Philippine Medical Association Journal, Manila

22:409-448 (Oct.) 1946

Paratyphoid Fever. P. T. Lantin.—p. 409.
Modern Trends in Urology. D. Antonio Jr.—p. 421.
Local Instillations of Penicillin in Chronic Suppurative Maxillary Sinusitis. J. Tamesis.—p. 425.
Ocular War Injuries. A. R. Ubaldo and C. V. Yambao.—p. 429.
Simplified Artificial Infant Feeding. P. H. Paulino and J. R. Jimenez. —p. 432.

Psychoanalytic Quarterly, Albany, N. Y.

16:1-150 (Jan.) 1947

A Lion Hunter's Dreams. Marie Bonaparte.—p. 1.
The Jew and Adolf Hitler. Gertrud M. Kurth.—p. 11.
The Jew as Symbol. H. Loeblowitz-Lennard.—p. 33.
Dreams of 2 Patients in Analysis Interpreted as Telepathic Rêve à Deux. J. Eisenbud.—p. 39.
Telepathy and Repression. Geraldine Pederson-Krag.—p. 61.
So-Called English School of Psychoanalysis. E. Bibring.—p. 69.

Radiology, Syracuse, N. Y.

48:213-318 (March) 1947

Quality of Radiation in Roentgen Therapy. Carman Lecture. R. R. Newell.—p. 215.
Duodenal Mechanism Regulating Motor and Secretory Activity of Stomach: Its Roentgenographic Disturbance in Duodenal Ulcer. J. Gershon-Cohen.—p. 232.
Pericardial Celomic Cysts. C. R. Lam.—p. 239.
Gastrocolic Fistula Complicating Carcinoma of Colon: Case Report. P. Zanca.—p. 244.
*Rheumatic Mitral Valve Disease Without Cardiac Enlargement. B. S. Epstein.—p. 249.
Unilateral Paraspinal Abscess. E. L. Saenger.—p. 256.
Observations on Gunshot Fractures of Mandible. A. C. Galluccio. —p. 260.
Addition to Technic of Simple Breast Roentgenography. E. L. Lome and E. P. Pendergrass.—p. 266.
Cholecystography: Comparative Study of Oral and Intravenous Contrast Substances. A. A. Brewer.—p. 269.
Late Changes in Mucous Membrane of Irradiated Larynx: Their Radiobiologic Relationship to Subepithelial Connective Tissue and to Retrogression of Laryngeal Carcinoma: Histologic Studies. F. Windholz. —p. 274.
Legal Liability for Error in Diagnosis: Roentgenologist and His Employer Held Liable for Mistaken Diagnosis. I. S. Trostler. —p. 282.

Rheumatic Mitral Valve Disease Without Cardiac Enlargement.—Epstein asserts that loud apical murmurs diagnostic of mitral valve disease may exist in the absence of cardiac enlargement or changes in the silhouette of the heart, just as it is possible for pronounced cardiac enlargement to be present with minimal and often misinterpreted murmurs. If the murmurs are characteristic, the diagnosis of mitral valve disease must be made even in the absence of radiologic criteria. Conversely, if there is any enlargement of the heart, the conclusion that organic heart disease is present must be reached. It should be recognized by both the radiologist and the clinician that in mitral valve disease there may be no visible alteration in the x-ray appearance of the heart, just as murmurs may be absent or atypical.

Review of Gastroenterology, New York

14:149-210 (March) 1947

Sarcoma of Liver: Disadvantages of Thorotrast as Diagnostic Agent. H. E. MacMahon, A. S. Murphy and Margaret I. Bates.—p. 155.
Transpleural Bilateral Vagotomy. W. R. Morrison.—p. 159.
Chronic Cholangitis. W. Nimeh.—p. 165.
Experiences with Beta-(4-Hydroxy-3, 5-Diiodophenyl)-Alpha-Phenyl-Propionic Acid (Priodax): Dye for Cholecystography. M. Feldman.—p. 168.
Belladonna and Barbiturates in Gastrointestinal Spasticity. R. I. Kilstein.—p. 171.
*Gastritis in the Toothless. A. Rodriguez-Olleros. H. Rey.—p. 180.

14:211-296 (April) 1947

Evolution of Gallbladder Disease. M. E. Rehfuss.—p. 227.
Surgical Aspects of Cholecystitis. M. Thorek.—p. 236.
Chronic Biliary Tract Disease. F. Glenn.—p. 240.
Local Sulfanilaminotherapy in Chronic Thromboulcerative Colitis: Means of Single or Double Colonic Tube. J. Nasio.—p. 253.
Unusual (Benign) Hematemesis: Gastric Telangiectatic Dysplasia; Rendu-Osler-Weber's Disease. H. I. Goldstein.—p. 258.

Gastritis in the Toothless.—Reviewing the histories of 3,684 patients with gastrointestinal disturbances, Rodriguez-Olleros found 168 who had extensive deficiencies of dentures which made proper mastication impossible. Nearly half of these patients, or 48.8 per cent, had primary gastritis, whereas of the remaining 3,516 patients with efficient mastication only 6.1 per cent had gastritis. The author believes that the part played by mechanical irritation of the stomach produced by deficient mastication is more important in the genesis of gastritis than the medical literature of today suggests.

Rocky Mountain Medical Journal, Denver

44:177-256 (March) 1947

Diagnosis of Rheumatic Fever in Children. S. Gibson.—p. 195.
Dynamic and Therapeutic Features of 17 Cases of So-Called Psychogenic Asthma. E. G. Billings.—p. 197.
Management of Hyperthyroidism. H. H. Davis.—p. 199.
*Coccidioidomycosis and Chest Roentgenogram. D. Clark.—p. 203.
Clinical Experience with Methergine, New Oxytocic. B. C. Williams. —p. 207.
Clinical Observations with Methergine, a Partial Synthetic Oxytocic. M. J. Baskin, E. L. Harvey and D. M. McEndaffer.—p. 208.

Coccidioidomycosis and the Chest Roentgenogram.—Clark says that from 70 to 80 per cent of the people who live in certain sections of western Texas, New Mexico, Arizona and southern California are found to have a positive coccidioidin skin test indicating active or inactive coccidioidomycosis infection. A sizable percentage of the transient population to these areas will likewise become infected. The great majority of infections are mild and self limited and involve the lungs and associated lymph nodes. Most of the residual lesions are visualized on the roentgenogram and are confused with tuberculosis, cancer, Boeck's sarcoid or pulmonary fibrosis due to other agents. The greatest difficulty arises in the differentiation of tuberculosis and coccidioidomycosis. It is important to make a differentiation, because inactive lesions of coccidioidomycosis can be disregarded as a cause of future disability whereas the lesions of tuberculosis require observation and treatment. It is frequently impossible to differentiate a chest lesion in which both the coccidioidin and tuberculin skin tests are positive. Sputum should be studied for the tubercle bacillus and the presence of Coccidioides immitis. If the patient is not raising sputum, a number of cultures for the tubercle bacillus should be made of gastric washings. If no organisms are found, the character of the chest lesion may be suggestive of coccidioidomycosis.

Southern Medical Journal, Birmingham, Ala.

40:197-280 (March) 1947. Partial Index

Adventures in the Esophagus. J. T. Howard.—p. 197.
*Exophthalmos in Relation to Orbital Tumors: Report of Eight Cases. S. B. Forbes.—p. 206.
Comparison of Pathologic Anatomy of Central American Tropical Ulcers and Those of a Variety of Leg Ulcers of North America. A. Golden. —p. 214.
Sympathectomy for Peripheral Vascular Disease. J. W. Hendrick and T. B. Aycock.—p. 219.
Whither Orthopedics. L. D. Baker.—p. 228.
Systemic Disturbances Occurring During Spinal Anesthesia. D. A. Davis.—p. 230.
*Total Intravenous Alimentation, Its Technics and Therapeutic Indications. R. S. Bigham Jr., R. E. Mason and J. E. Howard.—p. 238.
Catgut Closure of Low Midline Incision and Early Ambulation. C. L. Perry.—p. 246.
Commonly Unrecognized Diseases of Nasopharynx: Results of Studies of 140 Autopsy Specimens. A. R. Hollender.—p. 248.
Signs and Symptoms That Suggest Serious Lesions of Nervous System. W. T. Haverfield.—p. 252.
Disorders of Personal Time in Depressive States. E. W. Straus. —p. 254.
Certain Factors Influencing Cancer Curability. A. G. Levin.—p. 259.
Syphilis of Cervix. W. F. Guerriero, W. B. Mantooth and W. Moore. —p. 261.
Pruritus Ani in Office Practice. V. K. Allen.—p. 264.

Exophthalmos and Orbital Tumors.—Forbes describes 8 cases of unilateral exophthalmos due to orbital tumors. The tumors causing the proptosis were a lipoma, an extraorbital squamous cell carcinoma, a pyocele, a mucocele, a muscular hypertrophy or tumor associated with an exophthalmic goiter with two thyroidectomies, a true primary pseudotumor in all probability, and in 2 instances a cavernous hemangioma. The author describes a method of delivering a large hemangioma *en masse* and directs attention to the use of the electric saw for resection of the bony wedge in the Krönlein operation. Refractive changes may be of diagnostic value in cases of retrobulbar tumor. This was proved in 2 of the reported cases.

Total Intravenous Alimentation.—Bigham and his co-workers investigated protein metabolism during periods of total intravenous feeding in more than 25 patients. The group has included normal persons, patients with acute infections such as malaria and ulcerative colitis, degenerative diseases and patients before and after major surgical operations. The mixtures have consisted of "amigen," glucose, salts, water and vitamins. As an adjuvant measure in preoperative and postoperative therapy in certain types of cases the procedure has afforded the surgeon a relaxed empty bowel easy of handling. The postoperative course has been unusually benign and free of distention in every instance but 1. Except where there has been an irritative lesion of the intestine, as in ulcerative colitis, stools usually cease under this therapy in two to three days.

Surgery, St. Louis

21:283-442 (March) 1947

Primary Anastomosis in Treatment of Carcinoma of Colon. R. W. McNealy and V. G. Lands.—p. 283.
Treatment of Acute Appendicitis in a Closed City. A. T. Hays.—p. 297.
Incomplete Removal of Cystic Duct as Factor in Producing Post-cholecystectomy Complications. N. F. Hicken, L. B. White and Q. B. Coray.—p. 309.
Causalgia: Review of Its Characteristics, Diagnosis and Treatment. J. W. Kirklin, A. I. Chenoweth and F. Murphey.—p. 321.
*Benign Cavernous Hemangioma of Spleen: Literature Review and Case Report. G. B. Hodge and D. A. Wilson.—p. 343.
*Cystadenoma of Pancreas, with Presentation of 1 Case and Review of 28 Cases Collected from Medical Literature. R. E. Benson and W. Gordon.—p. 353.
Aneurysm of Renal Artery: Report of Additional Case. L. V. Marrone.—p. 362.
*Clostridial Wound Infections and Gas Gangrene: Arterial Damage as Modifying Factor. J. P. North.—p. 364.
*Penicillin in Treatment of Craniocerebral Injuries of War, with Particular Reference to Its Intraventricular Use. K. H. Abbott.—p. 373.
War Wounds of Chest. J. D. Martin Jr.—p. 381.
Ceepryn as Antiseptic for Preoperative Preparation of Skin. J. A. Key.—p. 390.

Benign Cavernous Hemangioma of Spleen.—Hodge and Wilson found only 31 cases in the literature that appear to represent true benign cavernous hemangioma of the spleen. Their patient was a Negro woman aged 35, who was admitted to the hospital with a complaint of an upper abdominal mass of four months' duration, with rapid increase in size in the last three weeks. The patient was operated on and a tumor weighing 13,130 Gm. was removed. She recovered. The diagnosis of benign cavernous hemangioma may be extremely difficult. It was an incidental finding in 11 of 12 necropsy cases. In the other case there was rupture of the lesion with death. In the 19 patients treated surgically 3 had a spontaneous rupture with serious hemorrhage into the abdominal cavity. A diagnosis of perforated gastric ulcer was made in 2 and appendicitis in 1. The other surgical cases presented the following combinations of signs and symptoms: abdominal mass or splenomegaly, pain, dyspnea, dysphagia, gastrointestinal disturbances and anemia. Splenic hemangioma should be suspected in patients with splenomegaly unrelated to a general disease process. When rupture occurs, shock, pain and signs of generalized peritoneal irritation are usually present. Shock must be combated, and immediate operation is imperative.

Cystadenoma of the Pancreas.—Benson and Gordon report the history of a woman aged 65 which illustrates the efficacy of surgical excision of a cystadenoma of the pancreas. They review a series of 28 cases collected from the literature. Cystadenoma of the pancreas is a benign, multilocular, cystic adenomatous neoplasm which most often originates from the tail or body of the pancreas. Clinically this tumor is characterized by a slow growth, absence of early symptoms and later development of a palpable tumor, upper abdominal pain and weight loss. Pancreatic cystadenomas occur much more frequently in women than in men (ratio 8:1). Complete surgical removal of the tumor is the treatment of choice.

Arterial Damage in Clostridial Wound Infections and Gas Gangrene.—Experience with the treatment of clostridial wound infections occurring among Chinese and American troops in North Burma convinced North of the importance of differentiating between those with major vascular damage and those without such injury. Gas gangrene is unlikely to develop unless the integrity of the main arterial blood supply is impaired either by the initial trauma or secondarily by such factors as tension within closed tissue compartments or external constriction by improperly applied plaster casts. There were 32 cases of true gas gangrene, representing an incidence among combat wounded of 7 cases per thousand casualties. The mortality in this group was 31.3 per cent, and no one survived without a major amputation. Wound infection by clostridial organisms in which the main blood supply of the part remains intact presents a much more favorable prognosis. In 37 such patients none developed gas gangrene, none required amputation and only 1 died. Limited surgical excisions which eliminate anaerobic conditions from the wound are adequate for this type of case.

Penicillin in Craniocerebral Injuries.—Abbott records observations on the use of penicillin in 62 cases of severe open (compound) craniocerebral injuries which were studied in the Southwest Pacific Theater of Operations. Included in this group were 19 cases in which one or more cerebral ventricles had been exposed or perforated. Penicillin was placed in the ventricles of each of these patients in doses of 25,000 to 50,000 units. In no instance were untoward toxic or irritative reactions observed. In 1 case 100,000 units of penicillin was placed in the cisterna magna in the treatment of pneumococcic meningitis. Only transitory and mild untoward symptoms resulted, and recovery ensued.

United States Naval Medical Bulletin

47:219-390 (March-April) 1947. Partial Index

Medicine at the Crossroads. R. H. Draeger and S. Warren.—p. 219.
*Acute Coronary Insufficiency: New Concept of Acute Coronary Diseases. A. M. Master and O. Auerbach.—p. 226.
*Penicillin Therapy in Relapsing Fever. J. F. Shaul and T. H. Saferstein.—p. 238.
Multiple Pulmonary Calcifications. A. C. Wyman.—p. 244.
Technic for Root Canal Therapy and Root Resection as Aid to Problem of Dental Officer Afloat. W. M. Lancaster.—p. 249.
Emotional Disturbances Encountered in Carrier Pilots. W. H. Requarth.—p. 253.
Repair of Soft Tissue Defects of Foot. W. G. Hamm and S. B. Hardy.—p. 263.
Vitamin Deficiency Diseases in Allied Prisoners of the Japanese. J. E. Nardini.—p. 272.
Subnormal Intelligence in Maladjusted Naval Trainee. M. M. Jackson.—p. 279.
Symptoms and Management of Arterial Hypertension Among Naval Personnel. R. E. Smalley.—p. 287.
Treatment of Renal Colic: Special Emphasis on Crystalluria. P. R. Stalnaker.—p. 297.
Chronic Asthma: Results of Treatment in 100 Cases. D. S. Smith. p. 302.

Acute Coronary Insufficiency.—Master and Auerbach emphasize that there are several acute coronary artery diseases rather than one. They are divided into two main divisions: (1) acute coronary insufficiency and (2) acute coronary artery occlusion. The concept of acute coronary insufficiency as a clinical entity is new. The precipitating causes are those of the ordinary episode of angina pectoris. The myocardial anoxia may be severe and prolonged. There is a disproportion between the demands of the myocardium and the oxygen or blood available to it. Diffuse, focal, disseminated areas of necrosis may be found in the subendocardium and the papillary muscles. There is no involvement of the pericardium or endocardium. The treatment is prophylactic, preventive, and it may be life saving. The prognosis is better than in acute coronary artery occlusion, which is a sudden complete closure of the vessel and results from advanced arteriosclerosis in some portion of an artery. The infarct is massive, involving endocardium and pericardium, with frequent mural thrombosis on the inner surface of the heart and subsequent embolization, and with frequent pericarditis. Treatment is of no avail.

Penicillin Therapy in Relapsing Fever.—Shaul and Saferstein report 4 cases of North African fever, which were treated with penicillin. Two patients did not have relapses. A third patient, who might have escaped a relapse if a longer initial course of penicillin had been given, received a second course and was cured, as was the fourth patient treated during the first relapse. The optimum therapeutic amount of penicillin appears to be between 1,560,000 and 2,800,000 units given in 40,000 unit doses every three hours intramuscularly.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

8:141-180 (Sept.) 1946

*Nodule Formation in Rheumatic Disease. G. D. Kersley, H. J. Gibson and M. H. L. Desmarais.—p. 141.
Pleuropneumonia-like Organisms and Arthritis. G. M. Findlay.—p. 153.
Nature of Fibrositis: III. Multiple Lesions and Neural Hypothesis. M. Kelly.—p. 161.
Epilogue to Series Entitled "The Nature of Fibrositis." M. Kelly. —p. 167.
Incidence of Rheumatism. B. R. Nisbet.—p. 168.
Review of Gout, 1939-1946. L. C. Hill.—p. 171.

Nodule Formation in Rheumatic Disease.—Kersley and his associates kept separate clinical records and biopsy reports on all cases of rheumatic or pseudorheumatic disease in which nodules were palpable and later classified them clinically, comparing their clinical diagnosis with the findings of the pathologist. Twenty-seven cases have been so examined. According to the clinical and pathologic data, the authors differentiate five groups: (1) gout, (2) typical rheumatoid arthritis, (3) rheumatic fever, (4) fibrositis and (5) fibrous nodules in the absence of signs of rheumatic disease. This study emphasizes the diagnostic value of biopsy of nodules in the rheumatic diseases.

British Heart Journal, London

8:171-242 (Oct.) 1946

*Ammi Visnaga in Treatment of Anginal Syndrome. G. V. Anrep, G. S. Barsoum, M. R. Kenawy and G. Misrahy.—p. 171.
Premature Systoles Originating in Sinoauricular Node. R. Langendorf and S. S. Mintz.—p. 178.
Dissecting Aneurysm of Aorta, with Cardiograms Suggestive of Cardiac Infarction. G. Bourne and P. J. W. Mills.—p. 181.
Chronic Dissecting Aneurysms. A. M. Jones and F. A. Langley.—p. 191.
Dissecting Aneurysm with Survival for Three Months After Rupture into Pleura. M. Campbell.—p. 200.
*Dissecting Aneurysm of Aorta: New Sign. J. A. Nissim.—p. 203.
Aneurysmal Dilatation of the Left Auricle, with Erosion of Spine. H. Ashworth and A. Morgan Jones.—p. 207.
Early Diagnosis of Rheumatic Valvular Disease in Recruits. J. Parkinson and R. Hartley.—p. 212.

Ammi Visnaga for the Anginal Syndrome.—According to Anrep and his associates Ammi Visnaga, known in Arabic as "Khella," grows wild in the Eastern Meriterranean countries and in Arabia. The decoction of its dried seeds is frequently prescribed by local physicians as a diuretic and antispasmodic in cases of ureteral stones. Of the several crystalline substances isolated from the seeds the most important is khellin ($C_{14}H_{14}O_5$). The authors investigated the action of khellin on the cardiovascular system in dogs with special reference to the coronary circulation and the heart muscle, and they also studied its action clinically on patients with angina pectoris and coronary thrombosis. The substance was found to be an effective vasodilator with a selective action on the coronary vessels, so that coronary flow was increased by doses insufficient to lower the general blood pressure. Continuous treatment by the oral or intramuscular routes or by the two combined gave favorable results in 35 of 38 cases of angina pectoris. The drug was given continuously for several weeks to 8 patients after coronary thrombosis and appeared to act favorably.

New Sign of Dissecting Aneurysm of Aorta.—Nissim discusses improvement in the recognition of dissecting aneurysm of the aorta. He reviews clinical and postmortem observations on a man aged 71 in whom a new sign of the disease is described. There was a difference between the right and left carotid pulsations; they were reduplicated on the right and single on the left, without a coexisting noticeable difference in the intensity of the pulsations on the two sides. There were two almost equal beats in quick succession on the right carotid for every single beat on the left. The explanation must lie in the difference of the rate of propagation of the pulse wave through the lumen of the artery and through its dissected coats where the blood was probably partly clotted. At necropsy this was the only pathologic finding that could account for it. The full significance of this sign was not realized until then.

British Journal of Radiology, London

20:85-128 (March) 1947

Radiotherapeutic Treatment of Cancer Corporis Uteri. J. Heyman. —p. 85.
Size of Vaginal Vault in Relation to Treatment of Cancer of Cervix. J. Moore and Margaret Tod.—p. 92.
Effect of X-Rays on Ascorbic Acid Concentration in Plasma and in Tissues. Carol H. Kretzschmar and F. Ellis.—p. 94.
Clinical, Radiologic and Pathologic Aspects of Pulmonary Hemosiderosis. L. D. W. Scott, S. D. S. Park and A. C. Lendrum.—p. 100.
Standardized Radiologic Pelvimetry: II. Qualitative. E. P. Allen. —p. 108.
Pneumonia of Lobe of Azygos Vein: Report of Case. T. C. Studdert and A. K. Turbull.—p. 119.
Radiologic Anatomy of Labyrinth. F. Pygott.—p. 121.

British Medical Journal, London

1:367-402 (March 22) 1947

*Poisoning with a Preparation of Iron, Copper and Manganese. G. Forbes.—p. 367.
*Outbreak of Diphtheria in a Highly Immunized Community. J. Fanning. —p. 371.
Faucial Diphtheria Among Army Personnel in Belgium, 1945. J. H. Bolton and M. J. Pivawer.—p. 373.
*Penicillin in Treatment of Diphtheria. M. N. De, J. R. Chatterjee and L. Ganguli.—p. 376.
Case of Mesenteric Thrombosis Complicating Multiple Wounds: Recovery Following Massive Resection. W. N. Hine.—p. 380.

Poisoning with Preparation of Iron, Copper and Manganese.—Forbes discusses the toxicology of the salts of iron, copper and manganese and describes 2 cases of fatal acute poisoning due to a proprietary preparation containing ferrous sulfate, manganese sulfate and copper sulfate. Results of the chemical analysis of the liver and the bowel and its contents are given in each case. A short series of animal feeding experiments is described, proving that the ferrous sulfate is the noxious ingredient in the preparation concerned.

Diphtheria in a Highly Immunized Community.—The chief points brought out in the outbreak described by Fanning are (1) the possibility of an alarming outbreak of diphtheria in a highly immunized community (94 per cent previously immunized, 80 per cent Schick negative), (2) the failure of previous immunization to protect against a severe attack in certain cases and (3) the occurrence of a high proportion of cases among Schick-negative reactors. The outbreak occurred in a private day school for girls. On the basis of observations in this outbreak the author emphasizes the necessity for repeated doses of antigen during the whole of school life. The interval suggested between doses is three years. The limited value of the Schick test as a measure of immunity is pointed out.

Penicillin in the Treatment of Diphtheria.—De and his associates of the Medical College Hospitals of Calcutta review observations on 27 cases of diphtheria in which only penicillin was used for treatment. Sixteen of the patients were bacteriologically positive and 11, though bacteriologically negative, were clinically typical cases of diphtheria. Twenty were early and 7 moderately severe. Recovery occurred in all cases without developing complications; the temperature was normal within three days, the throat swabs became negative within three to seven days, and the patches disappeared within two to five days. The author thinks that this small group of cases does not permit assessment of the value of penicillin, the less so since only early or moderately severe cases with slight toxemia were selected. Penicillin cannot replace antitoxic serum in severe cases of diphtheria where immediate neutralization of toxin is imperative.

Journal of Endocrinology, London

8:1-58 (Feb.) 1947

Serum Gonadotropin in Welsh and Shetland Ponies. F. T. Day and I. W. Rowlands.—p. 1.
Measurement of Lactational Performance in the Rat in Studies of Endocrine Control of Lactation. A. T. Cowie and S. J. Folley.—p. 9.
Adrenalectomy and Replacement Therapy in Lactating Rats. A. T. Cowie and S. J. Folley.—p. 14.
Late Effects of Castration and Administration of Sex Hormones on the Male Trichosurus Vulpecula. A. Bollinger and A. J. Tow.—p. 32.
Possibility of Determining Androgen Production by Measuring Acid Phosphatase in Semen: Investigations in Cryptorchid Patients. H. Engberg, E. Anderson, B. Sury and J. Raft.—p. 42.
Antigenic Properties of Iodinated Proteins. A. S. Parkes.—p. 49.

South African Medical Journal, Cape Town

21:177-212 (March 22) 1947. Partial Index

Relief of Pain. J. Drummond.—p. 178.
Modern Anesthetic Practice. H. Grant-Whyte.—p. 181.
Analgesia and Anesthesia in Obstetrics. O. S. Heyns.—p. 190.
Clinical Experiences with Nitrogen Mustard in Hodgkin's Disease. H. O. Hofmeyr.—p. 195.
Sensory Disturbances in Chronic Visceral Disease. G. W. H. Schepers. —p. 198.

Belgisch Tijdschrift voor Geneeskunde, Louvain

3:97-144 (Feb.) 1947. Partial Index

*Medical Indications for Extirpation of Spleen: Results. A. Dirix and J. Vandenbroucke.—p. 97.
Sensitizer for Therapeutic Action of Digitalis Substances. H. Handovsky.—p. 104.

Medical Indications for Splenectomy.—Dirix and Vandenbroucke review observations on 26 cases in which splenectomy was performed. Five patients had thrombopenia and 8 had hemolytic icterus which was either congenital or acquired. Other conditions for which splenectomy was done included Banti's syndrome, thrombophlebitis of the splenic vein with congestive splenic tumor, paroxysmal hemoglobinuria of the Marchiafava type, hemolytic anemia of unknown origin, splenomegalic cirrhosis, congestive tumor of the spleen presenting the clinical picture of splenic panmyelophthisis and malignant tumor of the spleen. There were 7 fatalities among the 26 patients. The results were favorable in the patients with essential thrombopenia, hemolytic icterus and thrombophlebitis of the splenic vein with congestive tumor. In the group with Banti's syndrome, in which the splenic factor is not entirely clear, splenectomy was a failure and served to increase the mortality rate. In the isolated case of splenic panmyelophthisis the results were favorable.

Progrès Médical, Paris

75:81-112 (Feb. 24) 1947

Complete Physiologic Section of Spinal Cord. J. A. Chavany.—p. 83.
*Treatment of Arterial Hypertension with Complete Dechloridation. H. Chabanier and C. Lobo-Onell.—p. 85.
Occupational Pathologic Syndrome. M. Gautrelet and J. Sterboul.—p. 90.

Dechloridation for Arterial Hypertension.—Chabanier and Lobo-Onell treated 9 patients, 3 men between the ages of 45 and 62, and 6 women between the ages of 43 and 52, with arterial hypertension as the only manifestation of nephroangiosclerosis with complete dechloridation for four to thirteen months. The hypertension was reduced to normal in 2 patients, a partial reduction resulted in 5 patients and failure occurred in 2 patients. The hypertension was reduced considerably in a woman aged 32 with chronic diffuse glomerulonephritis who had been placed on a salt free diet for six months. Some of the patients did not interrupt their occupational work, and the rest were able to resume their occupation in the course of treatment. The effect of the complete dechloridation has been slow and progressive as compared to that of surgical treatment of hypertensive syndromes. Dechloridation has been effective while hypotensors failed. Untoward reactions did not develop in spite of prolonged complete dechloridation. This treatment is suggested particularly for patients over 40 years of age with nephroangiosclerosis in the premalignant or prenephritic stage and for the chronic or vascular stage of diffuse glomerulonephritis.

Helvetica Medica Acta, Basel

14:1-92 (Feb.) 1947

Porphyrias and Myoporphyrias. L. Belloni.—p. 3.
*Regulatory Apparatus at Vascular Pole of Corpusculum Renis in Hypertension Produced by Compression in Rats. G. Schloss.—p. 22.
Variations of Cytochrome C Content in Myocardium and Striated Muscle in Human Pathology. Y. Gohat.—p. 45.
Electrocardiographic Studies in Various Functional Stages of Thyroid. F. Blum and H. Spörri.—p. 74.

Regulatory Apparatus at Vascular Pole of Corpusculum Renis.—Schloss demonstrates that in rats it is possible to produce hypertension by compressing one or both renal arteries with a clamp. If the throttled kidney is removed at the onset of hypertension the blood pressure decreases to normal values. Retention of water is accompanied with a striking decrease in blood pressure. Both of these manifestations apparently are caused by circulatory insufficiency. The terminal retention of urea in some rats is due to functional disorders in the renal tubules of the kidney which has not been blocked. Hypertension can exist without tissue changes in the blocked kidney, but atrophic changes begin in this kidney usually after a few days. Discussing the changes observed in the granulated epithelioid cells of the afferent arterioles of the blocked and unblocked kidney, the author says that these so-called e-cells are probably not essential for proper renal function. He was unable to detect in rats any connection between the e-cells and the hypertension due to constriction or any other evidence that e-cells can produce the pressor substance "renin." On the other hand, the renal tubules seem to play an important role in the production of "renin."

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

91:353-412 (Feb. 15) 1947

Case of Fatal Hemolytic Shock Following Blood Transfusion, Resulting from Rhesus Factor. J. A. Rodbard and S. I. de Vries.—p. 354.
Data on the Rhesus Factor in the Netherlands. J. J. van Loghem Jr. —p. 360.
*Epidemiology of Acute Anterior Poliomyelitis. G. D. Hemmes.—p. 368.

91:413-476 (Feb. 22) 1947

Spleen and Anemia: "Primary Splenic Panhematopenia." S. van Creveld. —p. 416.
Beware of Phenothiazine. D. P. R. Keizer.—p. 424.
*Peculiar Localization of Pain in Chronic Cholecystitis. N. J. Teljer. —p. 428.

Epidemiology of Acute Anterior Poliomyelitis.—Hemmes analyzes some controversial problems concerning the spread of poliomyelitis on the basis of observations made in the Netherlands during 1923 to 1945. He denies the occurrence of "stille feiung" (silent immunization). He advances the hypothesis that the virus which is excreted by human subjects does not infect others directly but has one or several intermediate hosts, which in turn may perhaps contaminate foodstuffs.

Peculiar Localization of Pain in Chronic Cholecystitis.—Teljer's observations were made on himself. For months he had pains in the right leg in the region of the sciatic nerve. This pain became disabling, but the diagnosis of sciatica proved incorrect. Pains in the left side of the back, fever, urobilinuria and other signs suggested cholecystitis and perhaps a complicating pancreatitis. Removal of a diseased gallbladder completely counteracted the symptoms.

Acta Chirurgica Scandinavica, Stockholm

96:1-192 (Jan. 20) 1947. Partial Index

Modification of Nicola's Operation for Habitual Dislocation of Shoulder. T. Jerre.—p. 1.
Case of Spontaneous Rupture of Subclavian Artery. E. Schroeder. —p. 17.
Cat Bite—Pasteurellosis—Halisteresis. O. Kapel.—p. 27.
Study of New Bone Formation Provoked by Subperiosteal Injections of Blood Plasma, Extract of Bone Marrow, etc.: Investigation by Experiments on Animals. A. Hellstadius.—p. 31.
*Diaphragmatic Hernia. Y. Candolin.—p. 61.
Problem of Hypoproteinemia in Delayed Gastric Emptying After Stomach Resection. L. Efskind.—p. 81.
Three Cases of Osteomyelitis in Children Treated with Penicillin. H. Tønnesen and B. Faber.—p. 96.
Low Spinal Cord Injuries Following Spinal Anesthesia. E. Schildt. —p. 101.

Diaphragmatic Hernia.—Candolin reviews observations on 8 cases of diaphragmatic hernia. In 4 cases the hernia resulted from perforating trauma, in 1 from blunt trauma; there was 1 hiatus hernia and 2 cases were congenital. In 1 of the 4 cases in which incarceration existed it developed in connection with a pregnancy in the fourth month. In this woman the hernial sac filled the whole of the left part of the thorax and contained half the stomach, all of the small intestine, the major portion of the large intestine and the pancreas. Five patients were operated on by the abdominal route (2 died), 1 by the thoracic approach (died); 2 were not operated on (1 died from incarceration). The author believes that the transabdominal approach is less difficult than one might imagine. Operation should be performed during the symptom free interval.

Book Notices

Clinical Hematology. By Maxwell M. Wintrobe, M.D., Ph.D., Professor of Medicine, University of Utah School of Medicine, Salt Lake City, Utah. Second edition. Cloth. Price, $11. Pp. 862, with 211 illustrations. Lea & Febiger, South Washington Square, Philadelphia 6, 1946.

The first edition was one of the most comprehensive and authoritative textbooks on clinical hematology and the second edition justly maintains that distinction. The new edition includes practically every significant advance in hematology since the first edition was printed, as well as the addition of new illustrations and diagrams that add to the clarity of the text. Current material on folic acid, the Rh factor, nitrogen mustards, radioactive phosphorus, mineral and porphyrin metabolism, factors concerned with erythropoiesis and erythrocyte destruction, thiouracil and the newer hemostatic agents are some of the additions. These subjects will especially interest the prospective purchaser, but practically every chapter has been revised or modified to conform with the most current and accepted concepts. The author's ability as a teacher, clinician and investigator is reflected throughout, and many involved and controversial phases of hematology are presented in a concise, objective and lucid manner. Because of the careful editing, the book covers a range of subject matter that one would expect to find only in a larger treatise of several volumes. The extensive bibliography at the end of each chapter is painstakingly selected, as are the illustrations and diagrams. The author has wisely chosen to discuss diagnostic laboratory procedures in the appropriate section in each part of the book and has reserved for a separate chapter on methods only those procedures which could not be logically discussed in the appropriate chapter. This is a unique departure from most books on hematology but was done with the conviction that a laboratory procedure must have a background of understanding if it is to be intelligently applied and properly evaluated. The tests discussed are for the most part simple procedures which have been selected on the basis of their use in the doctor's office. A complete review of the contents of the entire book is not possible, but the student or physician may purchase this book with the conviction that he is buying one of the most comprehensive, current and authoritative textbooks on hematology available in any language.

Further Studies in Encephalography. By E. Graeme Robertson, M.D., F.R.C.P., F.R.A.C.P., Neurologist, Royal Melbourne Hospital, Melbourne. Cloth. Pp. 104, with 53 illustrations. Hafner Publishing Co., Inc., 31 E. 10th St., New York 3; Macmillan & Co., Ltd., 32-34 Flinders St., Melbourne, C 1, 1946.

The author discusses pressure gradients and the flow of cerebrospinal fluid and gas during their interchange in encephalography. In vivo observations are substantiated by painstaking in vitro experiments. For example it appears that, when the head is flexed, inflow of gas into the ventricular system is due to the outflow of fluid from the cerebral subarachnoid spaces, which allows expansion of the cerebral hemispheres, thus permitting inflow of gas into the ventricles. Indeed, by properly posturing the head it is possible to fill either the subarachnoid spaces or the ventricles with gas.

When the head is flexed 82 to 90 degrees gas usually enters the fourth ventricle and the aqueduct of Sylvius, which is a useful method of demonstrating lesions affecting these structures. A simple pendulum attached to a celluloid protractor determines the desired angle of flexion. The base line of the protractor is taped along the orbitomeatal base line of Reid.

The technic of encephalography includes a description of special charts, the use of two needles simultaneously (the lower needle being attached to a water manometer so that constant pressure may be maintained throughout the procedure), the advantages of oxygen and the slow introduction of gas and the choice of anesthesia. When local procaine alone is not feasible, tribromoethanol or paraldehyde by rectum, ether or intravenous sodium pentothal may be employed. The author gives the usual warning against the use of sodium pentothal in children but does not stress the necessity of an airway in case of laryngeal spasm.

The significance of films reproduced in the text is clearly explained by accompanying diagrams, especially in the chapter on brain stem lesions, which is particularly illuminating. Attention is drawn to the fact that shift of the falx cerebri is often helpful in lateralizing a brain tumor, especially of the temporal lobe. Pertinent observations are made regarding encephalography in cerebral atrophy and hydrocephalus, though these subjects are not dealt with as fully as they might be. Finally, the author states that encephalography may be used in the presence of increased intracranial pressure, and for the localization of posterior fossa as well as supratentorial tumors. With this opinion we cannot agree.

This is an excellent, though in some respects incomplete, treatise on the subject of encephalography that can be recommended without hesitation to every one interested in the subject.

Human Torulosis: A Clinical, Pathological and Microbiological Study with a Report of Thirteen Cases. By Leonard B. Cox, M.D., M.R.C.P., F.R.A.C.P., Consultant in Neurology to the Royal Australian Air Force, and Jean C. Tolhurst, M.Sc., Senior Bacteriologist to the Alfred Hospital, Melbourne, Australia. Cloth. Price, 25s. Pp. 149, with 67 illustrations. Melbourne: Melbourne University Press, in association with Oxford University Press, Melbourne and London, 1946.

The authors present a detailed study of 13 proved cases of torulosis, 8 of which came to postmortem examination. Combined with the discussion of their own cases are numerous illustrative excerpts from articles in United States, English, South African and Australian medical journals in which there have been reported some 120 cases of the disease. These are documented by a bibliography of 134 references.

The presentation of the subject is divided into ten sections. The first is devoted to historical background, the second to detailed discussion of the clinical and pathologic findings, and the remaining ones to the infection in the various physiologic systems, the microbiology of the causative organisms, torulosis of experimental animals, the detailed pathology of the disease, laboratory diagnosis, sources and routes of infection, treatment, summary and conclusions. The authors believe that the disease is more common than reports in the literature would indicate. In the majority of cases it takes the form of a meningitis or meningoencephalitis, febrile or afebrile and chronic or subacute. They demonstrated torula infection of the lungs in 5 of their fatal cases, a higher incidence than is reported elsewhere in the literature of the disease. They also point out that in over 15 per cent of cases lymphadenopathy occurs but seldom with demonstrable invasion of the lymph nodes by Torula histolytica. The occasional occurrence of Hodgkin's disease in chronic cases of torulosis leads them to believe that there is occasionally a direct etiologic relationship.

The illustrations include many excellent photographs of the gross lesions and excellent photomicrographs of the histologic pathology and of the various forms of the organism in culture. Torulosis, a systemic fungous infection caused by Cryptococcus neoformans (Torula histolytica), is likewise known as European blastomycosis or Busse-Buschke's disease. While it is still relatively uncommon, it has a wide geographic distribution, and numbers of cases have been reported in the Eastern and the Southern United States. This monograph is a distinct addition to the literature on the mycoses and is especially valuable because of the detailed studies of the new cases reported and for the condensation of the literature of the disease and the appended bibliography.

Some Chapters in Cambridge Medical History. By Sir Walter Langdon-Brown. Cloth. Price, $1.75. Pp. 119. Cambridge University Press, Bentley House, 200 Euston Rd., London, N. W. 1; Macmillan Company, 60 Fifth Ave., New York 11, 1946.

"History is the shadow cast by a few great men." Around this central theme Sir Walter Langdon-Brown gives the story of the foundations and growth of the Cambridge School of Medicine in a series of essays; a second implied theme—tradition, continuity and quality—becomes evident as the figures of medical history of four hundred years pass in review. Chapter headings outline the record: John Caius and the revival of learning; William Gilbert and the dawn of experiment; Francis Glisson and the insurgent century; William Heberden and the age of reason; John Haviland and the beginning of reform; The great triumvirate (Paget, Humphry and Foster) and the rise of the medical school; Clifford Allbutt and the transition from the nineteenth century. Thus are pre-

sented some of the beginnings of British medicine, the seventeenth century of individual achievement, the eighteenth century of consolidation of gains in medical science and the nineteenth century of educational building. The limitations of the subject confine references to Cambridge men for the most part, except for an occasional migration to Oxford or where affairs of the Royal College of Physicians concerned Cambridge activities. One interested in medical history will find here a wealth of historical detail attractively told in beautifully turned English which would meet the ideals of Sir Clifford Allbutt himself.

Textbook of Medical Treatment. By Various Authors. Edited by D. M. Dunlop, B.A., M.D., F.R.C.P., Professor of Therapeutics and Clinical Medicine, University of Edinburgh, Edinburgh, L. S. P. Davidson, B.A., M.D., F.R.C.P., Professor of Medicine and Clinical Medicine, University of Edinburgh, Edinburgh, and J. W. McNee, D.S.O., D.Sc., M.D., Physician, H. M. the King in Scotland. With a foreword by A. J. Clark, B.A., M.D., D.P.H. Fourth edition. Cloth. Price, $8. Pp. 923, with 38 illustrations. William Wood & Co., Mount Royal and Guilford Aves., Baltimore 2, 1946.

This large manual treats therapeutics comprehensively. It should serve as an excellent textbook for students and general practitioners to amplify the treatment stated in the books on general medicine. The fourth edition is entirely rewritten and contains a splendid chapter on penicillin therapy. Various newer drugs, including thiouracil, are carefully evaluated. Emphasis is given to general management rather than to a mere enumeration of drugs. This should serve as a basis for rational and critical judgment of all therapeutic agents. Included are sections on the treatment of venereal and skin diseases, tropical medicine and an excellent chapter on psychosomatic medicine.

Howell's Textbook of Physiology. Edited by John F. Fulton, M.D., Sterling Professor of Physiology, Yale University School of Medicine, and others. Fifteenth edition. Cloth. Price, $6. Pp. 1,304, with 507 illustrations. W. B. Saunders Company, W. Washington Sq., Philadelphia 5; 7 Grape St., Shaftesbury Ave., London, W. C. 2, 1946.

Since its first appearance in 1905 this has been a standard physiology textbook for medical students. Now, after forty-one years, it is no longer a one man book but has been largely rewritten by a Yale group of authors, many of whom are authorities in major fields of physiology. It is a readable, reliable and up to date textbook which follows the general organization of previous editions. However, its value would be greatly bolstered by (1) reduction of the section on the nervous system, which now occupies more than a third of the pages, (2) the addition of a chapter on the liver and of a separate section on the endocrines, of which only reproduction is at present seriously considered, (3) a grossly expanded consideration of the role of physiology in medicine and (4) the inclusion of a chapter on aviation physiology.

How to Live: Rules for Healthful Living Based on Modern Science. By Irving Fisher, Ph.D., LL.D., and Haven Emerson, M.D. Prepared in collaboration with the Hygiene Reference Board of the Life Extension Institute. Twenty-First edition. Fabrikoid. Price, $2.50. Pp. 354. Funk & Wagnalls Co., 153 E. 24th St., New York, 1946.

Since the first edition of this book was published, it has had general acceptance as a competent guide to personal hygiene. For the most part it follows accepted dicta but occasionally breaks over into faddism or personal prejudices. Its point of view on the use of tobacco is distinctly in that classification. It condemns also the use of caffeine and of coffee and presents "pros and cons" on meat which lean heavily on the "con" side. Discounting these prejudices, however, the book contains a vast amount of useful information about health and its maintenance, written in easily understandable language.

How Can We Teach About Sex? By Benjamin C. Gruenberg. Public Affairs Pamphlet No. 122. Paper. Price, 10 cents. Pp. 31, with 7 illustrations. Public Affairs Committee, Inc., 22 E. 38th St., New York 16, 1946.

This booklet, developed by a well known authority on sex education, is a condensation in brief and readable form on what doctors and educators have concluded in relation to teaching about sex. It tells parents and educators what to do and what not to do. It contains a reading list divided according to the interests of parents and teachers, young men and women of college age, high school boys and girls, and children. The booklet can well be recommended to interested parties, particularly parents, teachers and the discussion groups of men's, women's and civic organizations.

Penicillin in Neurology. By A. Earl Walker, M.D., Associate Professor of Neurological Surgery, The University of Chicago, Chicago, and Herbert C. Johnson, M.D., Resident Neurological Surgeon, The University of Chicago. Cloth. Price, $5. Pp. 202, with 72 illustrations. Charles C Thomas, 301-327 E. Lawrence Ave., Springfield, Illinois, 1946

This little monograph will find a warm welcome and will be useful. Since the introduction of penicillin a few years ago the drug has become a most useful therapeutic agent in many neurologic diseases, while it has proved disappointing in others. The authors have prepared an extensive survey of the already voluminous literature. They have combined this with their own considerable experimental and clinical observations to write this clear, concise and useful monograph. They discuss the various methods of administering the drug, its toxicity to the central nervous system, its irritative effect when applied to the cerebral cortex and the resulting convulsions, and its use in the treatment of infections of the meninges, brain and skull and of syphilis of the nervous system. There is appended a brief chapter dealing with some other antibiotics, such as streptomycin, streptothricin, actinomycin and clavacin. Although the book is to be recommended for current use, it must soon become out of date in this field of intensive investigation and rapid progress.

An Introduction to Social Biology. By Alan Dale, B.Sc. Cloth. Price, 15s. Pp. 396, with 189 illustrations. William Heinemann, Ltd., 99 Great Russell St., London, W. C. 1, 1946.

This book was originally prepared as a guide to the teaching of students of high school age in Great Britain. It covers such topics as the evolution of man, reproduction, man's relation to his environment and his health, nutrition, the balance of nature and reasons for man's dominance over other animals. The book is so advanced in its discussions that it would seem to American readers far too advanced for other than students of college age. It would be particularly useful to students in the first year of medicine who have not had opportunity for a thorough grounding in biology. The author has studied a vast amount of recent literature in the fields of science and medicine. Hence the work would serve also to bring up to date the physician who has had little time for reading in fields correlated with medicine.

Allgemeine Neurosenlehre: Biologie, Psychoanalyse und Psychohygiene behoseilmäßer Störungen in 22 Vorlesungen. Von Prof. Dr. Rudolf Brun, Dozent für Neurologie und Neurobiologie an der Universität Zürich. Second edition. Cloth. Price, 32 Swiss francs. Pp. 518, with 6 illustrations, Benno Schwabe & Co., Klosterberg 27, Basel 10, 1946.

In the revisions for this edition Professor Rudolf Brun was helped considerably by Dr. Heinrich Meng, who at one time was a psychoanalyst in Frankfort on Main. The book represents twenty-two lectures on the "biology, psychoanalysis, mental hygiene and psychosomatic disturbances"; it has covered considerable territory and, of necessity, in a rather eclectic manner. Despite the fact that the book was published in 1946, it already gives the impression of being somewhat out of date because the major developments in psychoanalysis and psychiatry of the past two decades were taken but little into consideration.

Musical Sons of Aesculapius. By Willard Marmelzadt, M.D. Foreword by Victor Robinson, M.D. Cloth. Price, $3. Pp. 116, with illustrations. Froben Press, 4 St. Luke's Place, New York 14, 1946.

Some years have passed since Fielding Garrison wrote his essay on "Medical Men Who Have Loved Music." This book deals with physicians who were themselves musicians and brings forth many interesting facts as to the extent to which such physicians participated in the musical life of their communities. The volume refers to many contemporaneous doctors who are associated with medical orchestras, chamber music groups and some who are noted as composers and virtuosos.

Science Since 1500: A Short History of Mathematics, Physics, Chemistry, Biology. By H. T. Pledge, Librarian, Science Museum of London, London. Cloth. Price, $5. Pp. 357, with illustrations. The Philosophical Library, Inc., 15 E. 40th St., New York 16, 1947.

This book is offered as a short history of mathematics, physics, chemistry and biology. It is a reference work of great value but is certainly not easy reading for those who wish merely to be generally informed in the fields concerned. The illustrations are well chosen, and the index is so complete as to aid greatly the reference quality of the work.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

LUMBAR SYMPATHECTOMY FOR ARTERIOSCLEROSIS AND ULCERATION OF LEGS

To the Editor:—I would appreciate the present consensus on sympathectomies for the relief of pain and ulceration of the legs on patients suffering from arteriosclerosis of the extremities complicated by diabetes mellitus. One patient that I have in mind was benefited by a paravertebral nerve block. There was an increased warmth of the extremities both objectively and subjectively. What is the outlook if the patient is subjected to a sympathectomy?

M.D., Florida.

ANSWER.—Lumbar sympathectomy has given excellent results in the relief of pain and has also stimulated healing of leg ulcers in patients with arteriosclerosis of the lower extremities, with and without the complication of diabetes mellitus. The pain in such cases may be of two types: the cramplike pain of muscle ischemia and the aching and tenderness directly resulting from the ulcer.

The relief of the cramplike pains, usually induced by exercise and commonly felt in the calf and foot, as well as the deep seated aching which may follow the more intense pain, depends largely on the amount of vascular spasm present, especially in the collateral circulation. If the blood supply to the distal part of the extremity is increased when vasospasm is relieved by a paravertebral nerve block or the intravenous injection of tetraethylammonium bromide or chloride, it may be safely concluded that a sympathectomy will give satisfactory results. The actual increase in blood supply may be measured by an electrothermocouple or a plethysmograph, but the subjective sense of increased warmth and frequently the relief of pain are excellent criteria on which to judge the desirability of a sympathectomy. If increase in temperature or blood flow is not demonstrated after autonomic block, sympathectomy probably will not give relief of pain of either type.

The healing of chronic indolent leg ulcers following lumbar sympathectomy in properly selected cases has been gratifying. In many instances the relief of vascular spasm has been followed almost immediately with relief of local pain and improvement in the vascularity of the ulcer bed and periphery. Large ulcers may be healed more rapidly by skin grafting.

The urine should be made sugar free, either by suitable diet or with the addition of insulin, before a sympathectomy is performed. A bilateral lumbar sympathectomy is advisable for the majority of patients, even though pain or ulceration has appeared only in one leg, since such involvement may thereby be prevented in the other. The usual extraperitoneal approach to the lumbar ganglions has a low surgical risk, and the patient can be up in two or three days and returned home in a week.

The outlook in the specific case mentioned should be good following lumbar sympathectomy, since there was increased warmth following paravertebral nerve block.

EFFECTS OF PHILGAS EXPLOSION

To the Editor:—What is the effect of an explosion of Philgas on the bronchial tree? Philgas is a bottle gas generated from a liquid and without odor, used for steam and ovens. A chef and restaurant manager attributes his profuse and productive morning cough and difficulty in breathing to an explosion of this gas about two years ago. He was severely burned on both arms at this time. X-ray studies with lipiodol reveal moderately extensive bilateral lower lobe emphysema attributed to narrowing and stenosis of the bronchioles. The pleura is thickened on both sides. Sputum examinations are negative for tuberculosis. The Wassermann test was negative. Allergic history is negative.

M.D., New Jersey.

ANSWER.—The history of symptoms immediately after the explosion is not sufficient to warrant any definite statements. Explosions may cause small tears and hemorrhages in the bronchial tree, which might later develop into a chronic infection such as bronchitis or bronchiectasis. This should cause bloody sputum, however, shortly after the injury, and if this was not present in the case reported, the explosion most likely was not the cause of the present symptoms and findings. Philgas is propane to which a mercaptan has been added, making it definitely not odorless. There is nothing from the gas itself which would be a pulmonary irritant

POSTOPERATIVE VENOUS THROMBOSIS IN THE LEGS

To the Editor:—A month ago I was operated on for intractable duodenal hemorrhage. The operation was a subtotal gastrectomy. A penetrating ulcer in the first part of the duodenum was found. Spinal anesthesia was employed. My condition at the time of operation was poor, my hemoglobin after a transfusion being 60 per cent. I am 37 years old. I made an uneventful recovery until forty-eight hours after the operation, when during the administration of an intravenous glucose-saline solution I was seized with severe pains in both lower extremities, followed by a chill. The chill was attributed to pyrogens, but on the following day there was deep tenderness in both calves, particularly on the left side. This delayed my recovery and now, two weeks after leaving the hospital, my left leg is quite painful and both legs are quite painful. The treatment in vogue here is Dicumarol to the exclusion of virtually everything else. I receive now 100 mg. every four days. Does phlebitis begin as early as the second day generally? Could Dicumarol given early enough have prevented my condition? (It was started three days after operation.) At no time have I had a rise of temperature attributable to the phlebitis. Is this usual? Does the application of hot fomentations expedite recovery? My surgeon claims that it does not. Is there any danger of embolism in my present state if I walk? To recapitulate: I do not have fever, I have tenderness, I have edema, there has never been any involvement of the saphenous vein, there is no redness or heat in the legs, I am getting Dicumarol. Is the edema likely to be permanent? When can I safely resume my professional duties?

M.D., Illinois.

ANSWER.—There can be little doubt that the inquirer had venous thrombosis in the calves of both legs, as there was tenderness which was followed by edema.

Venous thrombosis does not ordinarily occur as early as the second postoperative day but it can happen, as it obviously did in the case under consideration.

Venous thrombosis may or may not be associated with an increase in oral temperature. The absence of an increased oral temperature does not exclude the diagnosis of venous thrombosis.

Good evidence that the application of hot fomentations favors cessation of venous thrombosis is lacking, but it is a time honored procedure, probably because it lessens distress and, along with elevation of the extremities, seems to hasten the disappearance of edema.

There is substantial and acceptable evidence that venous thrombosis is prevented by the administration of Dicumarol (3-3'-methylene-bis-[4-hydroxycoumarin]). However, it could not safely be used in a case like this as early as the second postoperative day because of the danger of inducing hemorrhage. As venous thrombosis usually occurs after the fourth or fifth postoperative day, administration of Dicumarol to prevent venous thrombosis is ordinarily begun on the third or fourth postoperative day. There is no acceptable standard dose of Dicumarol. The amount administered depends wholly on the effect of the drug on the percentage of prothrombin in the blood, and it is necessary when giving Dicumarol to determine the percentage of prothrombin in the blood at daily intervals; in exceptional cases when Dicumarol is administered over a long period it may be possible to administer it satisfactorily with a determination of the prothrombin time every second or third day. In the treatment or prevention of venous thrombosis it is desirable that the percentage of prothrombin in the blood be maintained between 10 and 30. The usual procedure is to give 300 mg. of Dicumarol on the first day and subsequently to consider administration of it only after the report has been received relative to the value for prothrombin in the blood. Ordinarily Dicumarol is not given if the prothrombin percentage in the blood is less than 20, and 200 mg. is administered if the prothrombin percentage in the blood exceeds 20. In the treatment of acute postoperative venous thrombosis, administration of the drug is ordinarily discontinued after there has been satisfactory reduction of the prothrombin in the blood until the patient leaves the hospital. Experience indicates that there is no need to continue administration of Dicumarol beyond this period except in unusual cases.

As operation was performed a month ago in the case under consideration there seems little further need for Dicumarol. The prospect of pulmonary embolism is extremely small if not wholly nonexistent. The problem presented at this time is that of preventing manifestations of chronic venous insufficiency, and this can be accomplished by the application of an adequate support to the limb to prevent edema. If this can be accomplished by means of ordinary elastic bandages, that method is satisfactory; if the edema cannot be prevented by this method, the inquirer may try the best grade of elastic stocking. If this procedure does not control the edema, he may use a pure gum rubber bandage 3 inches wide and 15 feet long (Davol Rubber Company, Providence, R. I.). The support should be worn until edema does not occur when the support is discontinued. In about half of the instances the support can be discarded within a period of three or four months. In other instances it may be

advisable to wear it indefinitely. Patients are instructed to discard the support for one day each month and to reapply it only if edema occurs.

There does not seem to be any reason why normal activity cannot be resumed.

TREATMENT OF HOOKWORM INFECTION

To the Editor:—A veteran contracted hookworm infection while serving in the Philippines. After six months of treatment with carbon tetrachloride, tetrachlorethylene and hexylresorcinol he still has symptoms and shows worms and ova in the stools. Is there anything new or any routine suggested for eradication of these helminths? M. A. Pelt, M.D., Chicago.

Answer.—It is indeed a rare case of hookworm infection in which the proper use of carbon tetrachloride, tetrachlorethylene and hexylresorcinol fails to give relief. Although only about 80 per cent of the hookworms will be removed by hexylresorcinol in mass treatments of several thousand cases, it is usually possible to reduce the number of worms in any single individual below the dangerous level by the proper use of this drug. This substance can be taken in 1 Gm. doses and repeated the second day, or 2 Gm. may be taken in a single dose. The taking of a single gram of hexylresorcinol and the repetition of this two weeks later if necessary may reduce the number of worms present to less than 25, which is a number which will not produce symptoms. Precautions should be taken to see that the patient takes a light evening meal and that the hexylresorcinol is given to the patient in the morning without any breakfast. Although water may be taken in any amount, food should not be taken for at least four hours after giving the drug. This will prevent the hexylresorcinol reacting with the food and allow its maximum effect on the worm. It is well worth checking a patient who has reacted to such active drugs so poorly in order to know that he has actually taken the required amount at the proper time.

ELECTROLYTE RESORPTION BY RENAL TUBULES

To the Editor:—In Best and Taylor: Physiological Basis of Medical Practice (ed. 3, 1946, p. 639) the following statement is made: "The absorption of sodium is influenced by the adrenal cortex and the posterior pituitary. The hormone of the adrenal cortex is essential for the normal reabsorption of sodium. . . . The antidiuretic hormone of the pituitary exerts the opposite effect, inhibiting the absorption of sodium from the proximal tubule and increasing the reabsorption of water and chloride mainly from the distal tubule." I presume there is a misprint and that the sentence should read "increasing the reabsorption of water and decreasing the reabsorption of chloride." Is it true that sodium is lost with chloride or do both the pituitary and the adrenal conserve sodium?

Samuel L. Isenberger, M.D., Philadelphia.

Answer.—The only well established hormonal influence on sodium resorption by the renal tubules is that known to be produced by the adrenal cortex. At present it cannot be stated definitely that the posterior pituitary has a specific effect on the resorption or excretion of either sodium or chloride. A slight but variable decrease in chloride resorption has been produced by the antidiuretic hormone. According to Pitts and Lotspeich (*Am. J. Physiol.* 147:138, 1946) there is a reciprocal relation in the resorption of bicarbonate and chloride ions by the kidney tubules. Certainly many factors must be studied simultaneously before one would be in a position to conclude that a hormone directly affects the resorption of any ion from the tubules of the kidney. Most studies are lacking in a sufficiently complete characterization of the electrolyte pattern of the blood and urine at the time of studying the effect of any given glandular extract or deficiency state.

REPEATED SKIN INFECTIONS

To the Editor:—A woman develops skin infections following any trauma to the skin, such as minute punctures of the skin following combing or washing. In a few days there is a local area of erythema which becomes infected and pustular. The condition heals without scar formation after three weeks. All laboratory tests and blood chemical studies have been negative. At the present time the patient is receiving a course of staphylococcus autotoxoid. Are there other methods of increasing this immunity for preventing infections of this type? Can staphylococcus autotoxoid be bolstered by the adjuvant injection of liver extract or foreign protein injection?

M.D., New York.

Answer.—It is presumed that the patient described in the query has had a physical examination and that nothing abnormal has been found. In addition, anemia, diabetes and diseases of the kidneys should be ruled out. Minimal changes may be present in the skin of the hands caused by excessive use of soap cleansers and water in the kitchen. There remains a group that is an easy prey to ordinary skin infections in whom all clinical and laboratory study proves fruitless for any clue which may be causative. Nonspecific measures such as the parenteral use of milk products and some of the metals, such as tin and manganese, occasionally yield brilliant results. This approach is being utilized now much less than formerly. Staphylococcus toxoid may be helpful. Recently the systematic and regular use of 70 per cent alcohol spongings of the skin has been advocated. A prolonged application of some well tolerated antiseptic is worth while. Daily soaks of the hands with aqueous potassium permanganate solution 1:5,000 or 1:7,000 may be helpful but stains the skin. Mercury bichloride may be used in strength of 1:5,000. Ointments such as 0.5 to 5 per cent ammoniated mercury have stood the best test of time. Ammoniated mercury may be irritating to a few. Furacin dressing is a proprietary ointment which is apparently an efficient remedy. The sulfonamides sensitize the skin too often to justify advocating their use locally, even though they are efficient. The internal use of these remedies should be reserved for some more serious occasions. Penicillin locally, while not as frequent a sensitizer as the sulfonamides, is proving to be such with seemingly increasing frequency. The use of ultraviolet rays in suberythema doses at regular intervals may be of decided benefit to patients who are easy victims of the simple staphyloccic infections.

DIPHTHERIA ANTITOXIN FOR NONDIPHTHERITIC PHARYNGITIS

To the Editor:—Is diphtheria antitoxin of therapeutic value in any disease besides diphtheria? A recent survey of the records of reported cases of diphtheria compared with records of diphtheria antitoxin supplied by the state department of health shows that antitoxin has been used in several cases in dosages of 20,000 to 40,000 units. When questioned, the doctors replied that it was their custom in practice to use diphtheria antitoxin if patients had "angry" throats which did not respond to penicillin and sulfonamides. This usually produced a clinical improvement. Since diphtheria does not always produce the "typical membrane" and may be present when culture and smears are negative, should these cases that respond to antitoxin be diagnosed as diphtheria?

J. T. Millington, M.D., Wilkes-Barre, Pa.

Answer.—It is true that some severe inflammations of the throat subside following the administration of diphtheria antitoxin. However, this does not necessarily mean that the antitoxin was responsible for the improvement. Unless the condition present was actually diphtheria, although unconfirmed by laboratory diagnosis, it should not be assumed that the diphtheria antitoxin was accountable for the favorable action.

Many years ago, before diphtheria antitoxin was as highly refined and concentrated as at present, it was sometimes believed that diphtheria antitoxin was beneficial in certain inflammatory conditions of the throat not due to diphtheria. This was explained on the basis of a foreign protein reaction. But when diphtheria antitoxin is used for remedial purposes, a definite diagnosis of diphtheria should be established only by laboratory procedures. Even when the culture is positive for diphtheria it may be advisable to make a test for virulence.

WATERY SECRETION FROM NIPPLE

To the Editor:—A woman aged 55, who has been in good health except for a hysterectomy about five years ago for a fibroma of the uterus, recently noticed a watery secretion from her left nipple. The breast is normal in appearance and to palpation. Axillary or supraclavicular glands are not palpable. The kidney is normal. The blood pressure is 150/90. She is extremely frightened from reading about precancerous conditions in lay papers. I know of milk and watery secretions from the breasts of children, both girls and boys, and I consider this condition of no consequence. Am I wrong? Would you suggest that I give her glandular therapy, and if so would it be estrogen or androgen?

Simon Steinbach, M.D., New York.

Answer.—Watery secretion from the nipple of the breast as described may be due to irritation of the nipple or to stimulation of the ducts themselves. If an intraductal papilloma or intraductal carcinoma was present the secretion should be dark or blood tinged. As this is not the case, one would be justified in carefully observing the patient at frequent intervals. If at any time a thickening of one of the ducts is found or the character of the secretion is altered, simple mastectomy would be preferable to cannulating the ducts in an attempt to dissect out the one under suspicion. Glandular treatment would be contraindicated, as the stimulation of the estrogens might be aggravating and androgen therapy could mask the symptoms. X-ray treatments have proved satisfactory in drying up such secretion.

CLIMATE FOR BRONCHITIS

To the Editor:—What is the present opinion regarding the effect of climate on chronic bronchitis in a child 2 years old? Would a mild dry climate or a mild moist climate be better? A 2 year old girl has mild chronic bronchitis characterized by frequent severe attacks of acute bronchitis. Would the Gulf Coast or central Texas be better?

Lieutenant, M. C., A. U. S.

Answer.—A mild dry climate is best for a child with chronic bronchitis. The climate of central Texas would be much preferable to that of the Gulf Coast.

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